

Response by
Pacific Power Products Company
to EPA's
CERCLA Information Request
to NMT Diesel, Inc.

June 16, 2008

Appendix Book 2

USEPA SF



1306542

Effective Date: 02/01/96

MSDS Number: 1015

DDC POWER COOL

PRODUCT IDENTITY: BULK ETHYLENE GLYCOL ANTIFREEZE & COOLANT

1. SUPPLIER

OLD WORLD INDUSTRIES, INC.

4065 COMMERCIAL AVENUE

NORTHBROOK, ILLINOIS 60062

PHONE: 847-559-2000

EMERGENCY PHONE: 1-800-424-9300 (CHEMTREC)

2. INGREDIENTS

MATERIAL	CAS#	% BY WT	PEL (OSHA)	TLV (ACGIH)
Ethylene Glycol	107-21-1	90 - 95	50 ppm	50 ppm
Diethylene Glycol	111-46-6	0 - 5	None	None
Di Potassium Phosphate	7758-11-4	1 - 2	None	None

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Slight odor.

May be fatal if swallowed.

Vapors can cause eye irritation.

LOWEST KNOWN LD50 (ORAL)

107-21-1

5840 mg/kg (Rats)

LOWEST KNOWN LD50 (SKIN)

107-21-1

9530 mg/kg (Rabbits)

HAZARD RATING SYSTEM (NFPA)

HEALTH: 1

FLAMMABILITY: 1

REACTIVITY: 0

KEY: 0 - Minimal, 1 - Slight, 2 - Moderate, 3 - Serious, 4 - Severe

POTENTIAL HEALTH EFFECTS

Routes of Exposure: Inhalation, Ingestion, Skin Contact/Absorption, Eye Contact

EYE: May cause slight transient (temporary) eye irritation. Corneal injury is unlikely. Vapors or mists may cause eye irritation.

SKIN: Prolonged or repeated exposure not likely to cause significant skin irritation. A single prolonged exposure is not likely to result in the material being absorbed through skin in harmful amounts. Repeated skin exposure may result in absorption of harmful amounts. Massive contact with damaged skin or of material sufficiently hot to burn skin may result in absorption of potential lethal amounts.

INGESTION: Single dose oral toxicity is considered to be moderate. Excessive exposure may cause central nervous system effects, cardiopulmonary effects (metabolic acidosis), and kidney failure. Small amounts swallowed incidental to normal handling operations are not likely to cause injury; however, swallowing amounts larger than that may cause serious injury, even death.

INHALATION: At room temperature, exposures to vapors are minimal due to physical properties; higher temperatures may generate vapor levels sufficient to cause adverse effects.

SYSTEMIC (OTHER TARGET ORGAN) EFFECTS: Repeated excessive exposures may cause severe kidney and also liver and gastrointestinal effects. Signs and symptoms of excessive exposure may be central nervous system effects. Signs and symptoms of excessive exposure may be nausea and/or vomiting. Signs and symptoms of excessive exposure may be anesthetic or narcotic effects. Observations in animals include formation of bladder stones after repeated oral doses of ethylene glycol. Reports of kidney failure and death in burn patients suggest the ethylene glycol may have been a factor. The use of topical applications containing this material may not be appropriate in severely burned patients or individuals with impaired renal function.

CANCER INFORMATION: Based on data from long-term animal studies, ethylene glycol is not believed to pose a carcinogenic risk to man.

TERATOLOGY (BIRTH DEFECTS): Exposure to ethylene glycol has caused birth defects in laboratory animals only at doses toxic to the mother.

REPRODUCTIVE EFFECTS: Ethylene glycol has not interfered with reproduction in animal studies except at very high doses.

4. FIRST AID MEASURES

Ensure physician has access to this MSDS.

Eyes: Immediately flush eyes with large amounts of water for 15 minutes, lifting lower and upper lids. Get medical attention as soon as possible. Contact lenses should never be worn when working with this chemical.

Skin:

Flush area of skin contact immediately with large amounts of water for at least 15 minutes while removing contaminated clothing. If irritation persists after flushing, get medical attention promptly. Wash clothing before re-use.

Inhalation:

If inhaled, immediately remove victim to fresh air and call *emergency medical care*. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Ingestion:

If swallowed give two glasses of water and immediately *call physician*. Induce vomiting of conscious patient by pressing finger down throat. Small amounts entering mouth should be rinsed out for 5 minutes.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

FLASH POINT: 119°C (247°F)

METHOD USED: Setaflash

AUTOIGNITION TEMPERATURE: Autoignition temperature for ethylene glycol is 398°C (748°F).

FLAMMABILITY LIMITS

LFL: 3.2%

UFL: Not determined.

HAZARDOUS COMBUSTION PRODUCTS: Hazardous combustion products may include and are not limited to carbon monoxide, carbon dioxide and trace amounts of aldehydes and organic acids. When available oxygen is limited, as in a fire or when heated to very high temperatures by a hot wire or plate, carbon monoxide and other hazardous compounds such as aldehydes might be generated.

EXTINGUISHING MEDIA: Water fog or fine spray. Alcohol resistant foams (ATC type) are preferred if available. General purpose synthetic foams (including AFFF) or protein foams may function, but much less effectively. Carbon dioxide. Dry chemical. Do not use direct water stream. May spread fire.

FIRE FIGHTING INSTRUCTIONS: No fire and explosion hazards expected under normal storage and handling conditions (i.e. ambient temperatures). However, ethylene glycol or solutions of ethylene glycol and water can form flammable vapors with air if heated sufficiently. Keep people away. Isolate fire area and deny unnecessary entry.

PROTECTIVE EQUIPMENT FOR FIRE FIGHTERS: Wear positive-pressure, self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire-fighting helmet, coat, pants, boots and gloves).

6. ACCIDENTAL RELEASE MEASURES

PROTECT PEOPLE: Material is moderately toxic when ingested. Take adequate precautions to keep people, especially children away from spill site. PVC-coated rubber gloves and monogoggles or faceshield can be used during cleanup of spill site.

PROTECT THE ENVIRONMENT: Do not dump used product or diluted material into sewers, on the ground, or into any body of water.

CLEANUP: Small spills: Soak up with absorbent material. Large spills: Dike and pump into suitable containers for disposal. Ensure compliance with all applicable statutes that require notification of appropriate government officials.

7. HANDLING AND STORAGE

Product on surfaces can cause slippery conditions. Practice reasonable care and cleanliness. Avoid breathing spray mists if generated. Keep out of reach of children. Product may become a solid at temperatures below -22°C (-8°F). Do not store near food, foodstuffs, drugs or potable water supplies.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Respiratory Protection:	Respiratory protection is required if airborne concentration exceeds TLV. At any detectable concentration, any self-contained breathing apparatus with a full facepiece and operated in a pressure-demand or other positive pressure mode or any supplied-air respirator with a full facepiece and operated in a pressure-demand or other positive pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive pressure mode. Escape: Any air-purifying full facepiece respirator (gas mask) with a chin-style or front- or back-mounted organic vapor canister or any appropriate escape-type self-contained breathing apparatus.
Skin Protection:	Protective gloves recommended when prolonged skin contact can not be avoided. Polyethylene; Neoprene; Nitrile; Polyvinyl alcohol; Natural Rubber, Butyl Rubber. Safety shower should be available.
Eye Protection:	Safety goggles and face shield. Emergency eyewash should be available. Contact lenses should not be worn when working with this chemical.
Engineering Controls:	Use general or local exhaust ventilation to meet TLV requirements.

9. PHYSICAL PROPERTIES

BOILING RANGE:	171 - 175°C (339 - 348°F)
FREEZE POINT:	-22°C (-8°F)
SPECIFIC GRAVITY (Water =1):	1.12
POUNDS/GALLONS	9.3
VAPOR PRESSURE (mm of Hg) @ 20C:	<0.1
VAPOR DENSITY (air=1):	2.1
WATER SOLUBILITY:	Complete
EVAPORATION RATE (BuAc = 1):	Nil
% VOLATILE BY VOLUME:	97.0
APPEARANCE:	Green
ODOR:	Mild

10. STABILITY and REACTIVITY

STABILITY:	Stable
CONDITIONS TO AVOID:	Isolate from oxidizers, heat & open flame.
MATERIALS TO AVOID:	Isolate from strong oxidizers such as permanganates, chromates & peroxides.
HAZARDOUS DECOMPOSITION PRODUCTS:	Carbon monoxide, carbon dioxide from burning.
HAZARDOUS POLYMERIZATION:	Material is not known to polymerize.

11. TOXICOLOGICAL INFORMATION

SKIN:	The dermal LD50 has not been determined.
INGESTION:	The lethal dose in humans is estimated to be 100 ml (3 ounces). The oral LD50 for rats is in the 6000-13,000 mg/kg range.
MUTAGENICITY (THE EFFECTS ON GENETIC MATERIAL):	In vitro mutagenicity studies were negative. Animal mutagenicity studies were negative.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL FATE

MOVEMENT & PARTITIONING: Bioconcentration potential is low (BCF less than 100 or Log Kow less than 3). Log octanol/water partition coefficient (log Kow) is -1.36. Henry's Law Constant (H) is 6.0E-08 atm-m³/mol. Bioconcentration factor (BCF) is 10 in golden orfe.

DEGRADATION & TRANSFORMATION: Biodegradation under aerobic static laboratory conditions is high (BOD20 or BOD28/ThOD greater than 40%). 5-Day biochemical oxygen demand (BOD5) is 0.78 p/p. 10-Day biochemical oxygen demand (BOD10) is 1.06 p/p. 20-Day biochemical oxygen demand (BOD20) is 1.15 p/p. Theoretical oxygen demand (ThOD) is calculated to be 1.29 p/p. Biodegradation may occur under both aerobic and anaerobic conditions (in either the presence or absence of oxygen). Inhibitory concentration (IC50) in OECD "Activated Sludge, Respiration Inhibition Test" (Guideline # 209) is < 1000 mg/L. Degradation is expected in the atmospheric environment within days to weeks.

ECOTOXICOLOGY: Material is practically non-toxic to aquatic organisms on an acute basis (LC50 greater than 100 mg/L in most sensitive species). Acute LC50 for fathead minnow (*Pimephales promelas*) is 51000 mg/L. Acute LC50 for bluegill (*Lepomis macrochirus*) is 27549 mg/L. Acute LC50 for rainbow trout (*Oncorhynchus mykiss*) is about 18000-46000 mg/L. Acute LC50 for guppy (*Poecilia reticulata*) is 49300 mg/L. Acute LC50 for water flea (*Daphnia magna*) is 46300-51100 mg/L. Acute LC50 for the cladoceran *Ceriodaphnia dubia* is 10000-25800 mg/L. Acute LC50 for crayfish is 91430 mg/L. Acute LC50 for brine shrimp (*Artemia salina*) is 20000 mg/L. Acute LC50 for golden orfe (*Leuciscus idus*) is greater than 10000 mg/L. Acute LC50 for goldfish (*Carassius auratus*) is greater than 5000 mg/L. Growth inhibition EC50 for green alga *Selenastrum capricornutum* is 9500-13000 mg/L.

STATE RIGHT-TO-KNOW:

California - Exposure Limits - Ceilings:
Director's List of Hazardous Substances:
Florida - Hazardous Substances List:
Massachusetts - Right-to-Know List:
Minnesota - Haz. Subs. List:
New Jersey - Right-to-Know List (Total):
Pennsylvania Right-to-Know List:

vapor-50 ppm ceiling; 125 mg/m3 ceiling
listed
listed
listed
listed (particulate and vapor)
Present greater than 1.0%
environmental hazard

CANADIAN REGULATIONS:

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required.

WHMIS INFORMATION: D2A - material has potential toxic effects.

Refer elsewhere in the MSDS for specific warnings and safe handling information. Refer to the employer's workplace education program.

16. OTHER INFORMATION

Contact: Mr. Michael Reed

Phone: (708) 559-2000

Old World Industries, Inc. makes no warranty, representation or guarantee as to the accuracy, sufficiency or completeness of the material set forth herein. It is the user's responsibility to determine the safety, toxicity and suitability of his own use, handling and disposal of this product. Since actual use by others is beyond our control, no warranty, expressed or implied, is made by Old World Industries, Inc. as to the effects of such use, the results to be obtained or the safety and toxicity of this product, nor does Old World Industries, Inc. assume liability arising out of the use by others of this product referred to herein. The data in this MSDS relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

PEAK95/ds



MATERIAL SAFETY DATA SHEET

AND SAFE HANDLING AND DISPOSAL INFORMATION

12/05/94
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MANUFACTURING COMPANY
IN MAINTENANCE PRODUCTS

12-79
REMOVED FROM PRODUCT 10-95
ISSUE DATE: 11/25/91 ZEP E.S.P.
SUPERSEDES: 05/28/91 PRODUCT NUMBER: 0848
General Purpose Cleaner

SECTION I - EMERGENCY CONTACTS

ZEP MANUFACTURING COMPANY TELEPHONE: (404)352-1680 BETWEEN 8:00 AM-5:00 PM (EST)
P.O. BOX 2015 NON-OFFICE HOURS, WEEKENDS, AND HOLIDAYS: AREA CODE 404
ATLANTA, GEORGIA 30301 435-2973, 351-2952, 432-2873
LOCAL POISON CONTROL CENTER
TRANSPORTATION EMERGENCY: CHEMTREC: TOLL FREE 1-800-424-9300 ALL CALLS RECORDED
(404)922-0923 or DISTRICT OF COLUMBIA (202)483-7616 ALL CALLS RECORDED

SECTION II - HAZARDOUS INGREDIENTS

DESIGNATIONS	TLV (PPM)	EFFECTS (SEE REVERSE)	% IN PROD.
** DIPROPYLENE GLYCOL METHYL ETHER ** dipropylene glycol monomethyl ether; CAS# 34590-94-8; RTECS# JB1575000; OSHA PEL-100 PPM; OSHA/ACGIH STEL-150 PPM	100	CBL CNS	< 5
** TETRASODIUM ETHYLENEDIAMINE TETRAACETATE ** ethylenedinitrilo tetraacetic acid, tetrasodium salt; EDTA; CAS# 64-02-8; RTECS# AH4025000; OSHA PEL N/D	N/D	IRR	< 5
** SODIUM DODECYLBENZENE SULFONATE ** linear alkyl aryl sodium sulfonate; CAS# 25155-30-0; RTECS# DB6825000; OSHA PEL N/D	N/D	IRR	< 5
** SODIUM SILICATE ** water glass; CAS# 1344-09-8; RTECS# N/D; OSHA PEL-N/D.	N/D	IRR	< 5

SECTION III - HEALTH HAZARD DATA

SPECIAL NOTE: MSDS data pertains to the product as dispensed from the container. Adverse health effects would not be expected under recommended conditions of use (diluted) so long as prescribed safety precautions are practiced.

ACUTE EFFECTS OF OVEREXPOSURE:

PRODUCT IS CONSIDERED NON-TOXIC ORALLY ACCORDING TO 16 CFR 1500.3 (CODE OF FEDERAL REGULATIONS 16, FEDERAL HAZARDOUS SUBSTANCES ACT REGULATIONS,

PART 1500.3). HOWEVER, NO PRODUCT SHOULD BE INTENTIONALLY INGESTED. INGESTION OF AN EXCESSIVE AMOUNT OF THE PRODUCT MAY CAUSE COMPLICATIONS.

THIS PRODUCT CAN BE AN EYE IRRITANT. INFLAMMATION OF EYE TISSUE IS CHARACTERIZED BY REDNESS, WATERING, AND/OR ITCHING.

THIS PRODUCT CAN CAUSE SLIGHT SKIN IRRITATION.

OVEREXPOSURE BY INHALATION OR SKIN ABSORPTION MAY PRODUCE MILD CENTRAL NERVOUS SYSTEM DEPRESSION, CHARACTERIZED BY HEADACHE, DIZZINESS, NAUSEA AND VOMITING.



MATERIAL SAFETY DATA SHEET

AND SAFE HANDLING AND DISPOSAL INFORMATION

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MANUFACTURING COMPANY
IN MAINTENANCE PRODUCTS

ISSUE DATE: 11/25/91 ZEP E.S.P.
SUPERSEDES: 05/28/91 PRODUCT NUMBER: 0848
General Purpose Cleaner

SECTION III - HEALTH HAZARD DATA (CONTINUED)

CHRONIC EFFECTS OF OVEREXPOSURE:

THERE ARE NO KNOWN EFFECTS FROM CHRONIC EXPOSURE TO THIS PRODUCT.
NONE OF THE INGREDIENTS ARE LISTED AS CARCINOGENS BY IARC, NTP, OR OSHA.

EST'D PEL/TLV: NOT ESTABLISHED PRIMARY ROUTES OF ENTRY: N/A

HMIS CODES: HEALTH 1; FLAM. 0; REACT. 0; PERS. PROTECT. B ; CHRONIC HAZ. NO

FIRST AID PROCEDURES:

SKIN : FLUSH CONTAMINATED SKIN WITH PLENTY OF WATER. CONSULT A PHYSICIAN
IF IRRITATION DEVELOPS.
EYES : IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. OC-
CASIONALLY LIFTING UPPER AND LOWER LIDS. GET MEDICAL ATTENTION AT ONCE.
INHALE: MOVE EXPOSED PERSON TO FRESH AIR. IF IRRITATION PERSISTS,
GET MEDICAL ATTENTION PROMPTLY.
INGEST: IF SWALLOWED, DO NOT INDUCE VOMITING. IF VOMITING OCCURS, KEEP HEAD
BELOW HIP LEVEL. GET EMERGENCY MEDICAL ATTENTION IMMEDIATELY.

SECTION IV - SPECIAL PROTECTION INFORMATION

PROTECTIVE CLOTHING : WEARING NEOPRENE OR NITRILE GLOVES IS RECOMMENDED WHEN
PROLONGED EXCESSIVE CONTACT OCCURS (eg IMMERSING HANDS)
EYE PROTECTION : WEAR TIGHT-FITTING SAFETY GLASSES ESPECIALLY IF CONTACT
LENSES ARE WORN.
RESPIRATORY PROTECTION: No extra measures are needed if ventilation is adequate.
VENTILATION : PROVIDE LOCAL EXHAUST/VENTILATION AS NEEDED TO KEEP CON-
CENTRATION OF VAPORS BELOW EXPOSURE LIMITS (PEL/TLV).

SECTION V - PHYSICAL DATA

BOILING POINT (F)	: 220	SPECIFIC GRAVITY	: 1.044
VAPOR PRESSURE(MMHG):	N/D	PERCENT VOLATILE BY VOLUME (%)	: 85.9
VAPOR DENSITY(AIR=1):	N/D	EVAPORATION RATE(WATER	=1): 1.0
SOLUBILITY IN WATER	: COMPLETE	PH(CONCENTRATE)	: 11.5-12.0
		PH(USE DILUTION OF 1%): 9.2
APPEARANCE AND ODOR : A THIN, DARK BLUE LIQUID HAVING LITTLE ODOR			

SECTION VI - FIRE AND EXPLOSION DATA

FLASH POINT(F) (METHOD USED): N/A (N/A)
FLAMMABLE LIMITS LEL N/A UEL N/A
EXTINGUISHING MEDIA : NON-COMBUSTIBLE.
SPECIAL FIRE FIGHTING: NONE
UNUSUAL FIRE HAZARDS : NONE



MATERIAL SAFETY DATA SHEET

AND SAFE HANDLING AND DISPOSAL INFORMATION

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MANUFACTURING COMPANY
IN MAINTENANCE PRODUCTS

ISSUE DATE: 11/25/91 ZEP E.S.P.
SUPERSEDES: 05/28/91 PRODUCT NUMBER: 0848
General Purpose Cleaner

SECTION VII - REACTIVITY DATA

STABILITY : STABLE
INCOMPATIBILITY(AVOID) : NONE
POLYMERIZATION : WILL NOT OCCUR.
HAZARDOUS DECOMPOSITION: CARBON DIOXIDE, CARBON MONOXIDE, AND OTHER UNIDENTIFIED ORGANIC COMPOUNDS.

SECTION VIII - SPILL AND DISPOSAL PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:
OBSERVE SAFETY PROCEDURES IN SECTION 4 & 9 DURING CLEAN-UP. ABSORB SPILL ON INERT ABSORBENT MATERIAL (es ZEP-O-ZORB). PICK UP AND PLACE RESIDUE IN A SUITABLE WASTE CONTAINER OR, IF PERMITTED, FLUSH TO SEWER. THOROUGHLY RINSE SPILL AREA WITH WATER.

WASTE DISPOSAL METHOD:

LIQUID WASTES ARE NOT PERMITTED IN LANDFILLS. THIS PRODUCT IS NOT CONSIDERED A HAZARDOUS WASTE UNDER RCRA. UNUSABLE LIQUID MAY BE ABSORBED ON AN INERT ABSORBENT MATERIAL (es ZEP-O-ZORB), DRUMMED, AND TAKEN TO A CHEMICAL OR INDUSTRIAL LANDFILL. IN SOME AREAS DISPOSAL BY FLUSHING INTO A SANITARY SEWER WITH PLENTY OF WATER MAY BE PERMISSIBLE. CONSULT LOCAL, STATE, AND FEDERAL AGENCIES FOR PROPER DISPOSAL METHOD IN YOUR AREA.

RCRA HAZ. WASTE NOS.: N/A

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN WHEN HANDLING AND STORING:

Store tightly closed container in a dry area at temps. between 40-120 degrees F.
KEEP PRODUCT OUT OF EYES.
DO NOT BREATHE SPRAY MISTS OR VAPORS.
Clothing or shoes which become contaminated with substance should be removed promptly and not reworn until thoroughly cleaned.
KEEP OUT OF THE REACH OF CHILDREN.

SECTION X - TRANSPORTATION DATA

DOT PROPER SHIPPING NAME
NONE

DOT HAZARD CLASS: N/A

DOT I.D. NUMBER : N/A DOT LABEL/PLACARD: NONE

A TSCA CHEMICAL INVENTORY - ALL INGREDIENTS ARE LISTED

A CWA 40CFR PART 117 SUBSTANCE(RQ IN A SINGLE CONTAINER): SODIUM DODECYL BENZENE SULFONATE - 1000#

NATIONAL SANITARY SUPPLY CO.
7 S. Figueroa Street
Los Angeles, California 90061
Emergency No. 1-800-535-5053 (INFOTRAC)

*FLOOR
CLEANER*

MATERIAL SAFETY DATA SHEET

SECTION 1. IDENTIFICATION OF PRODUCT

Product Name: SKIDOO CONCRETE CLEANER

Date Issued: 05/08/94
Supersedes: 05/21/92
National Item#: 2116XX

SECTION 2. INGREDIENTS CAS NUMBER PERCENT EXPOSURE LIMITS IN AIR
OSHA PEL ACGIH TLV OTHER

INGREDIENTS	CAS NUMBER	PERCENT	OSHA PEL	ACGIH TLV	OTHER
OXALIC ACID	144-62-7	6-7	1 mg/m ³	1 mg/m ³	
MONOETHANOLAMINE	141-43-5	10-11	6 PPM	6 PPM	
WATER	BALANCE				

N/A = Not Applicable N/D = Not Determined N/E = Not Established

SECTION 3. PHYSICAL DATA

Boiling Point (F): <212	Specific Gravity (Water=1): 1.04
Vapor Pressure (mm Hg.): <17	% Volatile (By Volume): APPROX 87
Vapor Density (Air=1): NO	Evaporation Rate (Water =1): 1
Solubility in Water: SOLUBLE	pH Range: 9.5 - 10.5
Appearance and Odor: CLEAR ORANGE/BLAND SCENT	

SECTION 4. FIRE AND EXPLOSION HAZARD DATA

Flash Point (Test Method): NON-FLAMMABLE
Flammable Limits: LEL= N/A UEL= N/A
Extinguishing Media: CO₂, DRY CHEMICAL, FOAM, WATER FOG

Special Fire Fighting Procedures: NORMAL FIRE FIGHTING PROCEDURES MAY BE USED. COOL AND USE CAUTION WHEN APPROACHING OR HANDLING FIRE-EXPOSED CONTAINERS.

Unusual Fire & Explosion Hazards: CONTAINERS MAY BURST IN HEAT.

SECTION 5. REACTIVITY DATA

Stability: STABLE

Incompatibility - Materials to Avoid: THIS PRODUCT IS ALKALI IN NATURE AND IS NOT COMPATIBLE WITH STRONG ACIDS. DO NOT ADD OXIDIZING AGENTS (BLEACH) TO THIS PRODUCT.

Hazardous Polymerization: WILL NOT OCCUR

Conditions to Avoid: NONE KNOWN TO NSS

Hazardous Decomposition Products: WHEN EXPOSED TO FIRE, PRODUCES NORMAL PRODUCTS OF COMBUSTION.

SECTION 6. SPILL, LEAK AND DISPOSAL PROCEDURES

Spill Response: FOR SMALL SPILLS, DILUTE WITH WATER AND PICK UP WITH MOP AND PAIL OR WET PICK UP VACUUM. FOR LARGE SPILLS, DIKE AREA TO CONTAIN SPILL. CLEAN UP USING ABSORBENT MATERIAL. PLACE ALL CONTAMINATED MATERIAL IN A CLOSE CONTAINER FOR DISPOSAL.

Product Disposal: WASTE FOR DILUTED PRODUCT MAY BE FLUSHED TO SEWER. UNDILUTED PRODUCT RECOVERED FROM SPILLS MAY BE SENT TO A LICENSED DISPOSAL FACILITY TO BE DISPOSED OF IN ACCORDANCE WITH FEDERAL/STATE REGULATIONS AND LOCAL ORDINANCES.

Container Disposal: TRIPLE RINSE EMPTY CONTAINER THOROUGHLY WITH WATER AND DISCARD IN REGULAR TRASH COLLECTION IF ALLOWED BY LOCAL, STATE AND FEDERAL REGULATIONS.

SECTION 7. HEALTH HAZARD DATA

Symptoms of Overexposure:

Eye Contact: EYE IRRITANT. IF NOT PROMPTLY TREATED, EYE DAMAGE MAY RESULT.

Skin Contact: SKIN IRRITANT. IRRITATION CAN OCCUR FROM CONTACT WITH CONCENTRATED PRODUCT OR FROM PROLONGED CONTACT WITH DILUTED PRODUCT. REPEATED OR PROLONGED EXPOSURE TO DILUTED PRODUCT MAY LEAD TO DERMATITIS.

Inhalation: NO HEALTH EFFECTS ARE KNOWN TO OCCUR FROM INHALATION OF THIS PRODUCT UNDER NORMAL USE IN A WELL VENTILATED AREA. HIGH AIRBORNE CONCENTRATIONS OF MISTS OR SPRAYS OF THIS PRODUCT MAY CAUSE IRRITATION OF THE UPPER RESPIRATORY TRACT.

Ingestion: INGESTION OF THESE PRODUCT MAY CAUSE DAMAGE TO THE MEMBRANES OF THE MOUTH, THROAT, AND GASTROINTESTINAL TRACT WHICH THE PRODUCT CONTACTS. BURNS OF THE MOUTH AND THROAT, NAUSEA, VOMITING, CRAMPS, AND DIARRHEA MAY OCCUR.

Primary Route(s) of Entry: EYES, SKIN

THE ETHANOLAMINE AND OXALIC ACID LISTED IN SECTION 2 ARE NOT LISTED ON THE OSHA, NTP OR IARC MONOGRAPH CARCINOGEN LISTS.

SECTION 8. EMERGENCY AND FIRST AID PROCEDURES

Eye Contact: IMMEDIATELY FLUSH THE EYE WITH LARGE QUANTITIES OF RUNNING WATER FOR A MINIMUM OF 15 MINUTES. HOLD THE EYELIDS APART DURING THE IRRIGATION TO ENSURE FLUSHING OF THE ENTIRE SURFACE OF THE EYE LID WITH WATER. GET MEDICAL ATTENTION IF IRRITATION PERSISTS.

Skin Contact: FLUSH THE EFFECTED AREA WITH LARGE QUANTITIES OF RUNNING WATER WHILE REMOVING CONTAMINATED CLOTHES AND SHOES. WASH CLOTHING BEFORE REUSE. GET MEDICAL ATTENTION IF IRRITATION PERSISTS.

Inhalation: REMOVE FROM CONTAMINATED AREA. IF SYMPTOMS OF RESPIRATORY DISCOMFORT PERSISTS, GET MEDICAL ATTENTION.

Ingestion: REQUIRES IMMEDIATE MEDICAL MANAGEMENT. DRINK MILK OR WATER AND GET MEDICAL ADVICE. VOMITING SHOULD BE INDUCED ONLY ON RECOMMENDATION OF MEDICAL PERSONNEL.

SECTION 9. SPECIAL PROTECTION INFORMATION

Respiratory Protection: NO SPECIAL REQUIREMENTS UNDER NORMAL USE CONDITIONS.

Ventilation: ROOM VENTILATION IS ADEQUATE.

Protection Gloves: NO SPECIAL REQUIREMENTS UNDER NORMAL USE CONDITIONS.

Eye Protection: NO SPECIAL REQUIREMENTS UNDER NORMAL USE CONDITIONS.

Other Protective Clothing/Equipment: WHERE GROSS EYE OR SKIN CONTACT MAY OCCUR, USE APPROPRIATE PROTECTIVE EQUIPMENT.

SECTION 10. ADDITIONAL INFORMATION AND PRECAUTIONS

SARA TITLE III H&P RATINGS: Acute, YES; Chronic, NO; Fire, NO;
Press. Release, NO; Reactive, NO;

NEPA RATINGS: HEALTH -1 FIRE -0 REACTIVITY -0 SPECIFIC -0

HMIS RATINGS: HEALTH -2 FIRE -0 REACTIVITY -1 PERSONAL -0

Handling and Storage Precautions: STORE IN A COOL DRY PLACE. REPLACE CAP AFTER USE. KEEP OUT OF REACH OF CHILDREN.

SECTION 11. REGULATORY CLASSIFICATIONS

NON-REGULATED

THE INFORMATION ON THIS MATERIAL SAFETY DATA SHEET REPRESENTS THE LATEST DATA AND BEST OPINION AS TO THE PROPER USE AND HANDLING OF THIS PRODUCT UNDER NORMAL CONDITIONS. ANY USE OF THIS PRODUCT OR METHOD OF APPLICATION WHICH IS NOT IN CONFORMANCE WITH THIS DATA SHEET AND THE PRODUCT LABEL DIRECTIONS, IS THE RESPONSIBILITY OF THE USER. THIS MATERIAL SAFETY DATA SHEET WAS PREPARED TO COMPLY WITH THE OSHA HAZARD COMMUNICATION REGULATION.

WALL CLEANER

NATIONAL SANITARY SUPPLY CO.
 13217 S. Figueroa Street
 Los Angeles, California 90061
 Emergency No. 1-800-533-5053 (INFOTRAC)
 Call nearest Sales Office for MSDS Information

MATERIAL SAFETY DATA SHEET

SECTION 1. IDENTIFICATION OF PRODUCT

Product Name: NSS CONCENTRATE CLEANER

Date Issued: 08/20/91
 Supersedes: 03/01/91
 National Item#: 2105XX

SECTION 2. INGREDIENTS	CAS NO.	% WT	EXPOSURE LIMITS IN AIR			
			OSHA PEL	ACGIH TLV	OTHER	
TRISODIUM PHOSPHATE	7601-54-9	2-4%	NE		NE	
SYNTHETIC DETERGENT	27176-87-0	1-3	NE		NE	
2-BUTOXYETHANOL	111-76-2	9-13	NE		NE	

N/A = Not Applicable; N/D = Not Determined

*THESE MATERIALS ARE SUBJECT TO THE REPORTING REQUIREMENTS UNDER SARA
 TITLE III, SECTION 313 AND 40 CFR PART 372.

SECTION 3. PHYSICAL DATA

Boiling Point (F): <212
 Vapor Pressure (mm Hg.): <17
 Vapor Density (Air=1): ND
 Solubility in water: SOLUBLE
 Appearance and Odor: CLEAR RED/SWEET SCENT
 Specific Gravity (Water=1): 1.07
 Percent Volatile (By Volume): 88
 Evaporation Rate (Water =1): 1
 pH Range: 13-13.5

SECTION 4. FIRE AND EXPLOSION HAZARD DATA

Flash Point (Test Method): NON-FLAMMABLE
 Flammable Limits: LEL= N/A UEL= N/A
 Extinguishing Media: CO2, DRY CHEMICAL, FOAM, WATER FOG
 Special Fire Fighting Procedures: NORMAL FIRE FIGHTING PROCEDURES MAY BE USED. COOL AND USE CAUTION WHEN APPROACHING OR HANDLING FIRE-EXPOSED CONTAINERS.

Unusual Fire & Explosion Hazards: CONTAINERS MAY BURST IN HEAT.

SECTION 5. REACTIVITY DATA

Stability: STABLE
 Incompatibility - materials to Avoid: THIS PRODUCT IS ALKALI IN NATURE AND IS NOT COMPATIBLE WITH STRONG ACIDS. DO NOT ADD OXIDIZING AGENTS (BLEACH) TO THIS PRODUCT.
 Hazardous Polymerization: WILL NOT OCCUR
 Conditions to Avoid: NONE KNOWN TO NSS
 Hazardous Decomposition Products: WHEN EXPOSED TO FIRE, PRODUCES NORMAL PRODUCTS OF COMBUSTION.

SECTION 6. SPILL, LEAK AND DISPOSAL PROCEDURES

Spill Response: FOR SMALL SPILLS, DILUTE WITH WATER AND PICK UP WITH MOP AND PAIL OR WET PICK UP VACUUM. FOR LARGE SPILLS, DIKE AREA TO CONTAIN SPILL. CLEAN UP USING ABSORBENT MATERIAL. PLACE ALL CONTAMINATED MATERIAL IN A CLOSED CONTAINER FOR DISPOSAL.
 Product Disposal: WASTE FOR DILUTED PRODUCT MAY BE FLUSHED TO SEWER. UNDILUTED PRODUCT RECOVERED FROM SPILLS MAY BE SENT TO A LICENSED DISPOSAL FACILITY TO BE DISPOSED OF IN ACCORDANCE WITH FEDERAL/STATE REGULATIONS AND LOCAL ORDINANCES.
 Container Disposal: TRIPLE RINSE EMPTY CONTAINER THOROUGHLY WITH WATER AND DISCARD IN REGULAR TRASH COLLECTION IF ALLOWED BY LOCAL, STATE AND FEDERAL REGULATIONS.

MATERIAL SAFETY DATA SHEET
Product Name: NSS CONCENTRATE CLEANER
Date Issued: 08/20/91

PAGE 2

SECTION 7. HEALTH HAZARD DATA

Symptoms of Overexposure:

Eye Contact: EYE IRRITANT. IF NOT PROMPTLY TREATED, EYE DAMAGE MAY RESULT.

Skin Contact: SKIN IRRITANT. IRRITATION CAN OCCUR FROM CONTACT WITH CONCENTRATED PRODUCT OR FROM PROLONGED CONTACT WITH DILUTED PRODUCT. REPEATED OR PROLONGED EXPOSURE TO DILUTED PRODUCT MAY LEAD TO DERMATITIS.

Inhalation: NO HEALTH EFFECTS ARE KNOWN TO OCCUR FROM INHALATION OF THIS PRODUCT UNDER NORMAL USE IN A WELL VENTILATED AREA. HIGH AIRBORNE CONCENTRATIONS OF MISTS OR SPRAYS OF THIS PRODUCT MAY CAUSE IRRITATION OF THE UPPER RESPIRATORY TRACT.

Ingestion: MAY CAUSE STOMACH PAIN CRAMPS, VOMITING AND NAUSEA.

THE 2-BUTOXY ETHANOL, DIPROPYLENE GLYCOL, AND SODIUM SILICATE LISTED IN SECTION 2 ARE NOT LISTED ON THE OSHA, NTP OR IARC MONOGRAPH CARCINOGEN LISTS.

Primary Route(s) of Entry: SKIN.

SECTION 8. EMERGENCY AND FIRST AID PROCEDURES

Eye Contact: IMMEDIATELY FLUSH THE EYE WITH LARGE QUANTITIES OF RUNNING WATER FOR A MINIMUM OF 15 MINUTES. HOLD THE EYELIDS APART DURING THE IRRIGATION TO ENSURE FLUSHING OF THE ENTIRE SURFACE OF THE EYE LID WITH WATER. GET MEDICAL ATTENTION IF IRRITATION PERSISTS.

Skin Contact: FLUSH THE AFFECTED AREA WITH LARGE QUANTITIES OF RUNNING WATER WHILE REMOVING CONTAMINATED CLOTHES AND SHOES. WASH CLOTHING BEFORE REUSE. GET MEDICAL ATTENTION IF IRRITATION PERSISTS.

Inhalation: REMOVE FROM CONTAMINATED AREA. IF SYMPTOMS OF RESPIRATORY DISCOMFORT PERSISTS, GET MEDICAL ATTENTION.

Ingestion: REQUIRES IMMEDIATE MEDICAL MANAGEMENT. DRINK MILK OR WATER AND GET MEDICAL ADVICE. VOMITING SHOULD BE INDUCED ONLY ON RECOMMENDATION OF MEDICAL PERSONNEL.

SECTION 9. SPECIAL PROTECTION INFORMATION

Respiratory Protection: NO SPECIAL REQUIREMENTS UNDER NORMAL USE CONDITIONS.

Ventilation: ROOM VENTILATION IS ADEQUATE.

Protection Gloves: NO SPECIAL REQUIREMENTS UNDER NORMAL USE CONDITIONS.

Eye Protection: NO SPECIAL REQUIREMENTS UNDER NORMAL USE CONDITIONS.

Other Protective Clothing/Equipment: WHERE EYE OR SKIN CONTACT MAY OCCUR, USE APPROPRIATE PROTECTIVE EQUIPMENT.

SECTION 10. ADDITIONAL INFORMATION AND PRECAUTIONS

Handling and Storage Precautions: STORE IN A COOL DRY PLACE. REPLACE CAP AFTER USE. KEEP OUT OF REACH OF CHILDREN.

SARA TITLE III H&P RATINGS: Acute: YES, Chronic: NO Fire: NO

Press. Release: NO, Reactive: NO
NFPA RATING: HEALTH -2 FIRE -0 REACTIVITY -0 SPECIFIC -0

SECTION 11. REGULATORY CLASSIFICATIONS

NON-REGULATED

THE INFORMATION ON THIS MATERIAL SAFETY DATA SHEET REPRESENTS THE LATEST DATA AND BEST OPINION AS TO THE PROPER USE AND HANDLING OF THIS PRODUCT UNDER NORMAL CONDITIONS. ANY USE OF THIS PRODUCT OR METHOD OF APPLICATION WHICH IS NOT IN CONFORMANCE WITH THIS DATA SHEET AND THE PRODUCT LABEL DIRECTIONS, IS THE RESPONSIBILITY OF THE USER. THIS MATERIAL SAFETY DATA SHEET WAS PREPARED TO COMPLY WITH THE OSHA HAZARD COMMUNICATION REGULATION.



ZEP Manufacturing Company
Acuity Specialty Products Group, Inc.
P.O. Box 2015
Atlanta, GA 30301
1-877-1-BUY-ZEP (428-9937)
www.zep.com

Material Safety Data Sheet and Safe Handling and Disposal Information

Section 1. Chemical Product and Company Identification

Product name **ZEP SPLIT RECIRCULATOR**
Product Use Recirculating Spray Wash Product
Product Code **0658**
Date of issue **12/15/04** Supersedes 03/14/97
Emergency For MSDS Information:
Telephone Acuity Specialty Products Group, Inc.
Numbers Compliance Services 1-877-1-BUY-ZEP (428-9937)

For Medical Emergency
INFOTRAC:
(877) 541-2016 Toll Free - All Calls Recorded

For a Transportation Emergency
CHEMTREC:
(800) 424-9300 - All Calls Recorded
In the District of Columbia (202) 483-7616

Printing date: 12/15/04

Prepared by Compliance Services Group
Acuity Specialty Products Group
1420 Seaboard Industrial Blvd.
Atlanta, GA 30318

Section 2. Composition, Information on Ingredients

Name of Hazardous Ingredients	CAS #	% by Weight	Exposure Limits
SODIUM METASILICATE; silicic acid (H2-Si-O3) disodium salt; water glass	6834-92-0	30 - 40	ACGIH TLV (United States). TWA: 10 mg/m ³ 8 hour(s). Form: Dust OSHA PEL (United States). : 15 mg/m ³ Form: Dust
SODIUM CARBONATE; soda ash; carbonic acid; disodium salt	497-19-8	30 - 40	Not established
TETRASODIUM PYROPHOSPHATE; TSPP; pyrophosphoric acid, tetrasodium salt	7320-34-5	10 - 20	Not established

Section 3. Hazards Identification

Acute Effects

Routes of Entry Dermal contact. Eye contact. Inhalation.

- Skin** Hazardous in case of skin contact (corrosive). Skin contact may produce burns. Skin contact can produce inflammation and blistering. The amount of tissue damage depends on length of contact.
- Eyes** Hazardous in case of eye contact (corrosive). Direct contact with the eyes can cause irreversible damage including blindness.
- Inhalation** Hazardous in case of inhalation. Inhalation of dust will produce irritation to gastro-intestinal or respiratory tract, characterized by burning, sneezing and coughing. Over-exposure by inhalation may cause respiratory irritation.

Ingestion Harmful if swallowed. May cause burns to mouth, throat and stomach.

NOTE: MSDS data pertains to the product as delivered in the original shipping container(s). Risk of adverse health effects are lessened by following all prescribed safety precautions, including use of proper personal protective equipment.

HMIS

Health	2
Flammability	0
Reactivity	0
Personal Protection	D, q

Carcinogenic Effects

Ingredients: Not listed as carcinogen by OSHA, NTP or IARC.

Chronic Effects

Repeated exposure of the eyes to a low level of dust can produce eye irritation. Repeated skin exposure can produce local skin destruction, or dermatitis. Repeated inhalation of dust can produce varying degree of respiratory irritation or lung damage. Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

See Toxicological Information (section 11)

Section 4. First Aid Measures

- Eye Contact** Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately.
- Skin Contact** In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Get medical attention if irritation develops.
- Inhalation** If inhaled, remove to fresh air. Flush mouth and nasal passages with water repeatedly. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
- Ingestion** Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If affected person is conscious, give plenty of water to drink. Get medical attention immediately.

Section 14. Transport Information**Proper shipping name** Not applicable.**DOT Classification** Not a DOT controlled material (United States).**UN number** Not regulated.

NOTE: DOT classification applies to most package sizes. For specific container size classifications or for size exceptions, refer to the Bill of Lading with your shipment.

Section 15. Regulatory Information**U.S. Federal Regulations** SARA 313 toxic chemical notification and release reporting:

No products were found.

Clean Water Act (CWA) 311: No products were found.

Clean air act (CAA) 112 regulated toxic substances: No products were found.

All Components of this product are listed or exempt from listing on TSCA inventory.

Section 16. Other Information

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.



MATERIAL SAFETY DATA SHEET

AND SAFE HANDLING AND DISPOSAL INFORMATION

12/05/94
PAGE 1 OF 3

MANUFACTURING COMPANY
IN MAINTENANCE PRODUCTS

ISSUE DATE: 06/15/88 ZEP FLASH
SUPERSEDES: 08/06/87 PRODUCT NUMBER: 0723
Concrete Cleaner

SECTION I - EMERGENCY CONTACTS

*OUT OF SERVICE
12-95*

ZEP MANUFACTURING COMPANY TELEPHONE: (404) 352-1680 BETWEEN 8:00 AM-5:00 PM (EST)
P.O. BOX 2015 NON-OFFICE HOURS, WEEKENDS, AND HOLIDAYS: AREA CODE 404
ATLANTA, GEORGIA 30301 435-2973, 351-2952, 432-2873
LOCAL POISON CONTROL CENTER
TRANSPORTATION EMERGENCY: CHEMTREC: TOLL FREE 1-800-424-9300 ALL CALLS RECORDED
(404) 922-0923 or DISTRICT OF COLUMBIA (202) 483-7616 ALL CALLS RECORDED

SECTION II - HAZARDOUS INGREDIENTS

DESIGNATIONS	TLV (PPM)	EFFECTS (SEE REVERSE)	% IN PROD.
** SODIUM METASILICATE ** silicic acid (H ₂ -Si-O ₃) di- sodium salt; water glass; CAS# 6834-92-0; RTECS# VV9275000; OSHA Dust Limit-2mg/m ³ (for powders only).	N/D	COR	60-70
** TRISODIUM ORTHOPHOSPHATE ** TSP; phosphoric acid, trisodium salt); CAS# 7601-54-9; RTECS# TC9490000; OSHA PEL- N/D; STEL- N/D	N/D	IRR	10-20
** SODIUM CARBONATE ** soda ash; carbonic acid, di- sodium salt; CAS# 497-19-8; RTECS# VZ4050000; OSHA/ ACGIH DUST LIMIT= 15mg/m ³	N/D	IRR	5-15
** NONYLPHENOXYPOLY(ETHYLENEOXY)ETHANOL ** poly(oxy-1,2-ethanediyl), alpha-(nonylphenyl)-omega- hydroxy; CAS# 9016-45-9; RTECS# MD905000; OSHA PEL- N/D	N/D	EIR	< 5
** SODIUM CHLORIDE ** halite; salt; CAS# 7647-14-5; RTECS# VZ4725000; OSHA PEL-N/D.	N/D	EIR	5-10

SECTION III - HEALTH HAZARD DATA

SPECIAL NOTE: MSDS data pertains to the product as dispensed from the container. Adverse health effects would not be expected under recommended conditions of use (diluted) so long as prescribed safety precautions are practiced.

ACUTE EFFECTS OF OVEREXPOSURE:

Corrosive to skin and eyes. The amount of tissue damage depends on length of contact. Eye contact can result in corneal damage or blindness. Skin contact can produce inflammation and blistering. Inhalation of dust will produce irritation of gastrointestinal or respiratory tract, characterized by burning, sneezing and coughing. Severe over-exposure can produce lung damage, choking, unconsciousness or death.



MATERIAL SAFETY DATA SHEET

AND SAFE HANDLING AND DISPOSAL INFORMATION

PAGE 2 OF 3

MANUFACTURING COMPANY
IN MAINTENANCE PRODUCTS

ISSUE DATE: 06/15/88 ZEP FLASH
SUPERSEDES: 08/06/87 PRODUCT NUMBER: 0723
Concrete Cleaner

SECTION III - HEALTH HAZARD DATA (CONTINUED)

CHRONIC EFFECTS OF OVEREXPOSURE:

Repeated exposure of the eyes to a low level of dust can produce eye irritation. Repeated skin exposure can produce local skin destruction or dermatitis. Repeated inhalation of dust can produce varying degrees of respiratory irritation or lung damage.

NONE OF THE INGREDIENTS ARE LISTED AS CARCINOGENS BY IARC, NTP, OR OSHA.

EST'D PEL/TLV: NOT ESTABLISHED PRIMARY ROUTES OF ENTRY: INH.

HMIS CODES: HEALTH 3; FLAM. 0; REACT. 0; PERS. PROTECT. D ; CHRONIC HAZ. YES

FIRST AID PROCEDURES:

SKIN : IMMEDIATELY FLUSH CONTAMINATED SKIN WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. GET MEDICAL ATTENTION IMMEDIATELY.

EYES : IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES, OCCASIONALLY LIFTING UPPER AND LOWER LIDS. GET MEDICAL ATTENTION AT ONCE.

HALE: MOVE VICTIM TO FRESH AIR. FLUSH MOUTH AND NASAL PASSAGES WITH WATER. REPEATEDLY. GET MEDICAL ATTENTION IF IRRITATION PERSISTS.

INGEST: IF THIS PRODUCT IS SWALLOWED, DO NOT INDUCE VOMITING. IF VICTIM IS CONSCIOUS GIVE PLENTY OF WATER TO DRINK. GET MEDICAL ATTENTION AT ONCE.

SECTION IV - SPECIAL PROTECTION INFORMATION

PROTECTIVE CLOTHING : WEAR RUBBER, NEOPRENE, OR NITRILE GLOVES, ALKALI RESISTANT FOOTWEAR, FACE SHIELD, APRON, AND ARM COVERINGS.

EYE PROTECTION : WEAR SPLASH-PROOF SAFETY GOGGLES ESPECIALLY IF CONTACT LENSES ARE WORN.

RESPIRATORY PROTECTION: USE NIOSH-APPROVED DUST MASK IF DUST IS PRESENT.

VENTILATION : IF DUST IS DETECTED, VENTILATE WORK AREA BY OPENING WINDOWS AND USING EXHAUST FANS.

SECTION V - PHYSICAL DATA

BOILING POINT (F) : N/A

VAPOR PRESSURE(MMHG): N/A

VAPOR DENSITY(AIR=1): N/A

SOLUBILITY IN WATER : 1 lb./gal.

SPECIFIC GRAVITY

PERCENT VOLATILE BY VOLUME (%)

EVAPORATION RATE(

PH(CONCENTRATE)

PH(USE DILUTION OF 1% SOLUTION) : 12.0-12.5

APPEARANCE AND ODOR : ORANGE, FREE-FLOWING POWDER WITH PINE FRAGRANCE.

SECTION VI - FIRE AND EXPLOSION DATA

FLASH POINT(F) (METHOD USED): N/A

FLAMMABLE LIMITS LEL N/A UEL N/A

EXTINGUISHING MEDIA : NON-COMBUSTIBLE SOLID.

SPECIAL FIRE FIGHTING: NONE

UNUSUAL FIRE HAZARDS : NONE



MATERIAL SAFETY DATA SHEET

AND SAFE HANDLING AND DISPOSAL INFORMATION

PAGE 3 OF 3

MANUFACTURING COMPANY
MAINTENANCE PRODUCTS

ISSUE DATE: 06/15/88 ZEP FLASH
SUPERSEDES: 08/06/87 PRODUCT NUMBER: 0723
Concrete Cleaner

SECTION VII - REACTIVITY DATA

STABILITY : STABLE
INCOMPATIBILITY(AVOID) : STRONG ACIDS AND OXIDIZING AGENTS
POLYMERIZATION : WILL NOT OCCUR.
HAZARDOUS DECOMPOSITION: CARBON DIOXIDE, CARBON MONOXIDE AND TOXIC/CORROSIVE
FUMES AS OXIDES OF PHOSPHOROUS.

SECTION VIII - SPILL AND DISPOSAL PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:
OBSERVE SAFETY PRECAUTIONS IN SECTIONS 4 & 9 DURING CLEAN-UP. PICK UP SPILLED
MATERIAL AND PLACE IN A SUITABLE WASTE CONTAINER. WASH AREA THOROUGHLY WITH A
DETERGENT SOLUTION AND RINSE AREA WELL WITH WATER.

WASTE DISPOSAL METHOD:

PRODUCT IS NOT CONSIDERED A HAZARDOUS WASTE UNDER RCRA. UNUSABLE MATERIAL
SHOULD BE DRUMMED AND TAKEN TO A CHEMICAL OR INDUSTRIAL LANDFILL, OR IF PERMIT-
TED PUT INTO SOLUTION WITH WATER AND FLUSHED INTO A SANITARY SEWER. NEUTRAL-
IZATION OF PH MAY BE A PREREQUISITE FOR SEWER DISPOSAL. CONSULT LOCAL, STATE,
AND FEDERAL AGENCIES FOR PROPER METHOD OF DISPOSAL IN YOUR AREA.

RCRA HAZ. WASTE NOS.: N/A

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN WHEN HANDLING AND STORING:
THIS PRODUCT IS SLIPPERY WHEN MIXED WITH WATER. DO NOT WALK ON AREAS TREATED
WITH WET PRODUCT UNTIL THEY ARE RINSED WELL AND HAVE DRIED.
Store tightly closed container in a dry area at temps. between 40-120 degrees F.
Store away from strong acids and oxidizing compounds.
KEEP PRODUCT AWAY FROM SKIN AND EYES.
KEEP AWAY FROM FOOD AND FOOD PRODUCTS.
DO NOT BREATHE DUST.
Clothing or shoes which become contaminated with substance should be removed
promptly and not reworn until thoroughly cleaned.

SECTION X - TRANSPORTATION DATA

DOT PROPER SHIPPING NAME

NONE

DOT HAZARD CLASS: N/A

DOT I.D. NUMBER : N/A

DOT LABEL/PLACARD: NONE

A TSCA CHEMICAL INVENTORY - ALL INGREDIENTS ARE LISTED

A CWA 40CFR PART 117 SUBSTANCE(RQ IN A SINGLE CONTAINER): SODIUM PHOSPHATE,
RIBASIC-5000#

MATERIAL SAFETY DATA SHEET

Required under USDL Safety and Health Regulations for Ship Repairing,
Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

SECTION I

MANUFACTURER'S NAME <u>J P CHEMICAL</u>		EMERGENCY TELEPHONE NO. <u>(503) 598-9550 or 639-1007</u>
ADDRESS (Number, Street, City, State, and ZIP Code) <u>PO BOX 231236 TIGARD, OREGON 97281</u>		
CHEMICAL NAME AND SYNONYMS <u>Desertron Blend 440</u>		TRADE NAME AND SYNONYMS <u>None</u>
CHEMICAL FAMILY <u>Alkaline</u>	FORMULA <u>Proprietary</u>	

SECTION II - HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
PIGMENTS		N/A	BASE METAL		N/A
CATALYST		N/A	ALLOYS		N/A
VEHICLE		N/A	METALLIC COATINGS		N/A
SOLVENTS		N/A	FILLER METAL PLUS COATING OR CORE FLUX		N/A
ADDITIVES		N/A	OTHERS		N/A
OTHERS		N/A			N/A
HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES				%	TLV (Units)

SECTION III - PHYSICAL DATA

BOILING POINT (°F.)	<u>218.5</u>	SPECIFIC GRAVITY (H ₂ O=1)	<u>>1.0</u>
VAPOR PRESSURE (mm. Hg.)	<u>.01</u>	PERCENT, VOLATILE BY VOLUME (%)	<u>Nil</u>
VAPOR DENSITY (AIR=1)	<u>1.0</u>	EVAPORATION RATE (—NPA— =1)	<u>.05</u>
SOLUBILITY IN WATER	<u>Soluble</u>		
APPEARANCE AND ODOR <u>Red/Fresh Scent</u>			

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used) <u>None - Tag Closed Cup</u>	FLAMMABLE LIMITS <u>Non Flammable</u>	Lel	Uel
EXTINGUISHING MEDIA <u>N/A</u>			
SPECIAL FIRE FIGHTING PROCEDURES <u>N/A</u>			
UNUSUAL FIRE AND EXPLOSION HAZARDS <u>N/A</u>			

Material Safety Data Sheet

DAZZLER URETHANE PLUS FLOOR FINISH

Identity (Trade Name As Used On Label)

BOB NAGEL DISTRIBUTING CO., INC.

Manufacturer:

2101 S. E. 7th Ave.

Address

Portland, OR 97214

(503) 233-6531

Phone Number (For Information)

(800)-535-5053 (Infotrac)

Emergency Phone Number

Telex*

MSDS Number*

CAS Number*

February 10, 1993

Date Prepared

Prepared By*

Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.

SECTION 1 - MATERIAL IDENTIFICATION AND INFORMATION

COMPONENTS — Chemical Name & Common Names
(Hazardous Components 1% or greater; Carcinogens 0.1% or greater)

%

OSHA
PEL

ACGIH
TLV

OTHER LIMITS
RECOMMENDED

Diethylene Glycol Monomethylether Cas #11-77-3 has not been established

This product contains 5.23% Diethylen Glycol Monomethyl Ether which is considered toxic and subject to the reporting requirements of section 313 of Title III of the superfund amendments and reauthorization act of 1986 and 40 CFR part 372.

Non-Hazardous Ingredients

TOTAL

100

SECTION 2 - PHYSICAL / CHEMICAL CHARACTERISTICS

Boiling Point 200-220 degrees F

Specific Gravity (H₂O = 1) 1.049

Vapor Pressure (mm Hg and Temperature) less than 30

Melting Point n.a.

Vapor Density (Air = 1) n.a.

Evaporation Rate butyl acetate = 1 less than 0.4

Solubility in Water completely miscible emulsion

Water Reactive no

Appearance and Odor Opaque white emulsion Characteristic odor

SECTION 3 - FIRE AND EXPLOSION HAZARD DATA

Flash Point and non flammable

Auto-Ignition

Flammability Limits in

LEL

UEL

Method Used aqueous solution

Temperature

Air % by Volume n.a.

n.a.

n.a.

Extinguisher Media Use media proper to the primary cause of fire.

Special Fire

Fighting Procedures Firefighters use self-contained breathing apparatus

Unusual Fire and Explosion Hazards n.a.

OUT OF SERVICE

12-95

CLEAN ACROSS AMERICA AND
THROUGHOUT THE WORLD™ZEP MANUFACTURING COMPANY
P.O. BOX 2015
ATLANTA, GEORGIA 30301PACIFIC DETROIT DIESEL ALLSION
5061 N LAGOON AVE
PORTLAND, OR 97217-7694

MATERIAL SAFETY DATA SHEET

AND SAFE HANDLING AND DISPOSAL INFORMATION

3603

01/19/95

ISSUE DATE: 11/11/89

SUPERSEDES: 08/25/89

ZEPRIDE - E

PRODUCT NO.: 0410

General Purpose Cleaner

SECTION I - EMERGENCY CONTACTS

TELEPHONE:

(404) 352-1680 BETWEEN 8:00 AM - 5:00 PM (EST)

MEDICAL EMERGENCY:

(404) 435-2973 NON-OFFICE HOURS, WEEKENDS
(404) 432-2873 AND HOLIDAYS. PLEASE CALL YOUR
(404) 424-4789 LOCAL POISON CONTROL
(404) 319-6151
(404) 242-3561

TRANSPORTATION EMERGENCY:

(404) 922-0923

CHEMTREC:

1-800-424-9300 TOLL-FREE - ALL CALLS RECORDED

DISTRICT OF COLUMBIA:

(202) 483-7616 ALL CALLS RECORDED

SECTION II - HAZARDOUS INGREDIENTS

DESIGNATIONS

* SODIUM METASILICATE * silicic acid (H₂-Si-O₃) disodium salt; water glass; CAS# 6834-92-0; RTECS# VV9275000;
OSHA Dust Limit-2mg/m³ (for powders only)
@ * ETHYLENE GLYCOL MONOBUTYL ETHER * 2-butoxyethanol; butyl cellosolve; CAS# 111-76-2; RTECS# KJ8575000;
OSHA PEL (SKIN)- 25 ppm
* ALPHA OLEFIN SULFONATE, SODIUM SALT * sulfonic acids; c14-18 alkane and c12-20 alkene and
c12-20-alkenehydroxy, sodium salts; CAS# 68439-57-6; RTECS# NONE; OSHA PEL N/D

TLV
(PPM)EFFECTS
(SEE REVERSE)
COR% IN
PROD.
< 5

25

TOX IRR CBL

10-20

N/D

EIR

< 5

@ Identifies chemicals listed under SARA-Section 313 for release reporting

SECTION III - HEALTH HAZARD DATA

Special Note: MSDS data pertains to the product as dispensed from the container. Adverse health effects would not be expected under recommended conditions of use (diluted) so long as prescribed safety precautions are practiced.

Acute Effects of Overexposure:

Product in concentrated form is a severe eye irritant. Overexposure may lead to eye tissue damage which can be permanent. Skin contact may produce irritation. Overexposure by inhalation may cause respiratory irritation.

Chronic Effects of Overexposure:

Repeated or prolonged skin contact may produce chronic inflammation or dermatitis, characterized by redness, scaling, or itching. Repeated eye exposure may produce chronic inflammation of the eye or corneal damage. Animal studies indicate a potential for liver, kidney, or red blood cell damage. Relevance of these studies or exposure levels which might produce these effects in humans has not been established. None of the hazardous ingredients are listed as carcinogens by IARC, NTP, & OSHA.

Est'd PEL/TLV: Not established

Primary Routes of Entry: Inh. Skin.

HMIS Codes: HEALTH 2; FLAM. 0; REACT. 0; PERS. PROTECT. B; CHRONIC HAZ. YES

FIRST AID PROCEDURES:

Skin: Flush contaminated skin with plenty of water. Consult a physician if irritation develops.

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting upper and lower lids. Get medical attention at once.

Inhalation: Move exposed person to fresh air. If irritation persists, get medical attention promptly.

Ingestion: If this product is swallowed, do not induce vomiting. If victim is conscious give plenty of water to drink. Get medical attention at once.

SECTION IV - SPECIAL PROTECTION INFORMATION

Protective Clothing: Wear neoprene, nitrile, or natural rubber gloves or gloves with proven resistance to the ingredients listed.

Eye Protection: Wear splash-proof safety goggles especially if contact lenses are worn.

Respiratory Protection: Keep face away from spray mist and do not breathe vapors.

Ventilation: Ventilation should be equivalent to outdoors. Use exhaust fans and open windows in enclosed spaces.

SECTION V - PHYSICAL DATA

Boiling Point (°F): 220 Approx.

Specific Gravity: 1.08

Vapor Pressure (mmHg):

N/A

Percent Volatile by Volume (%): 82

Vapor Density (air = 1): N/A

Evaporation Rate (WATER = 1):

1.0

Solubility in Water: COMPLETE

pH (concentrate): 12.5-13.0

pH (use dilution of 1:100):

10.8-11.5

Appearance and Odor: CLEAR, WATER-THIN, BLUE LIQUID W/MILD SOLVENT ODOR.

SECTION VI - FIRE AND EXPLOSION DATA

Flash Point (°F) (method used): NONE (TCC)

Flammable Limits: LEL N/A UEL N/A

Extinguishing Media: Noncombustible.

Special Fire Fighting: None

Unusual Fire Hazards: None



ZEP MANUFACTURING COMPANY
Acuity Specialty Products Group, Inc.
P.O. BOX 2015
ATLANTA, GA 30301
1-877-1-BUY-ZEP

Material Safety Data Sheet and Safe Handling and Disposal Information

Section 1. Chemical Product and Company Identification

Product name **ZEP BIO CONCRETE CLEANER**
Product Use Concrete Cleaner
Product Code **1660**
Date of issue **10/07/03** Supersedes **04/11/02**

Emergency For MSDS Information:
Telephone Acuity Specialty Products Group, Inc.
Numbers Compliance Services 1-877-1-BUY-ZEP

For Medical Emergency:
INFOTRAC
(877) 541-2016 Toll Free - All Calls Recorded

For a Transportation Emergency:
CHEMTREC
(800) 424-9300 - All Calls Recorded
In the District of Columbia (202) 483-7616

Printing date: 10/10/03

Prepared by Compliance Services Group
Acuity Specialty Products Group
1420 Seaboard Industrial Blvd.
Atlanta, GA 30318

Section 2. Composition, Information on Ingredients

Name of Hazardous Ingredients	CAS #	% by Weight	Exposure Limits
SODIUM METASILICATE; silicic acid (H ₂ -Si-O ₃) disodium salt; water glass	6834-92-0	<10	OSHA (United States). : 2 mg/m ³ Form: Dust

Section 3. Hazards Identification

Acute Effects

Routes of Entry Not applicable.

Skin

Hazardous in case of skin contact (irritant). Non-sensitizer for skin. Skin inflammation is characterized by itching, scaling, or reddening. Medical Conditions Aggravated by Overexposure: Skin

Eyes

Hazardous in case of eye contact (irritant). Inflammation of the eye is characterized by redness, watering, and itching. Liquid in eye may cause irritation with possible damage if not rinsed immediately.

Inhalation

No data on acute toxicity of the product when inhaled. Medical Conditions Aggravated by Overexposure: Respiratory

Ingestion

No data on acute toxicity of the product when ingested.

Carcinogenic Effects

Ingredients: Not listed as carcinogen by OSHA, NTP or IARC.

Chronic Effects

Repeated or prolonged exposure to the substance can produce damage to Eyes. Repeated or prolonged contact with irritants may cause dermatitis.

See Toxicological Information (section 11)

HMIS

Health	2
Physical Hazard	0
Reactivity	0
Personal Protection	n, p

Section 4. First Aid Measures

Eye Contact

Flush with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.

Skin Contact

In case of contact, immediately flush skin with plenty of water. Get medical attention if irritation develops.

Inhalation

If inhaled, remove to fresh air. If symptoms persist, seek immediate medical attention.

Ingestion

Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If affected person is conscious, give plenty of water to drink. Call medical attendant, medical doctor, or poison control center immediately.

Section 5. Fire Fighting Measures

Flash Point

Not applicable.

Flammable Limits Not applicable.

Flammability

Non combustible.

Fire Hazard

None.

Fire-Fighting Procedures

Use DRY chemicals, CO₂, water spray or foam.



No LONGER
CHANGED TO
#699

U.S. DEPARTMENT OF LABOR
Occupational Safety and Health Administration Rev. 3-16-83

Form Approved B
OMB No. 44-R1387

MATERIAL SAFETY DATA SHEET

Required under USDL Safety and Health Regulations for Ship Repairing,
Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

SECTION I

MANUFACTURER'S NAME Safety-Kleen Corporation		EMERGENCY TELEPHONE NO. 312/697-8460
ADDRESS (Number, Street, City, State, and Zip Code) 655 Big Timber Road, Elgin, IL 60120		
CHEMICAL NAME AND SYNONYMS Organic Solvents		TRADE NAME AND SYNONYMS Immersion Cleaner & Carburetor &
CHEMICAL FAMILY	FORMULA Cold Parts Cleaner #609	P/N 6631

SECTION II — HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	SOLVENTS	%	TLV (Units)
			Cresylic Acids	11.9	5ppm (skin)
Non-aqueous Phase →			Sodium Soap of Tall Oil	7.5	----
			Chlorinated Solvent (Methylene Chloride)	31.9	200ppm
			Chlorinated Solvent (Ortho-di-chlorobenzene)	31.6	50ppm
Aqueous Phase →			Additives:		
			Complex Amines	0.4	----
			Water	16.7	----
Hazardous Mixtures of Other Liquids, Solids, or Gases					
NOTE: This product is a "two-phase" system -- consisting of an upper					
moderately alkaline aqueous (water) layer (20 vol%) and a					
lower non-aqueous (solvent) layer (80 vol%)					

SECTION III — PHYSICAL DATA

BOILING POINT (°F.)	102-395°F	SPECIFIC GRAVITY (H ₂ O=1)	1.1900
VAPOR PRESSURE (mm Hg.)	Water	PERCENT. VOLATILE BY VOLUME (%)	80%
VAPOR DENSITY (AIR=1)	Water	EVAPORATION RATE (_____=1)	
SOLUBILITY IN WATER	Miscible	in all proportions	
APPEARANCE AND ODOR	Clear, dark, amber liquids-aromatic odor--two-phase liquid system (two distinct phases or layers)		

SECTION IV — FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used) Non-flammable	FLAMMABLE LIMITS N.A.	LeI	UeI
EXTINGUISHING MEDIA N.A.			
SPECIAL FIRE FIGHTING PROCEDURES Although product is non-flammable, open flames, welding arcs, or other high temperature sources can cause product decomposition. This composition can yield hydrogen chloride and/or phosgene.			

SECTION V — HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE 20 ppm This refers to the solvent portion only. The solvent portion is blanketed with a mildly alkaline water layer which serves as an evaporation retarder and minimizes fumes and vapors from the solvent portion.

EFFECTS OF OVEREXPOSURE
Severe eye irritation -- "burning of skin" -- excessive inhalation causes headache, dizziness and nausea.

EMERGENCY AND FIRST AID PROCEDURES

EYE CONTACT: Flush with copious amounts of water and call a physician.
SKIN CONTACT: Wash with mild soap and water and/or baking soda water. Then apply skin cream.
INHALATION: Remove to fresh air and call a physician; apply artificial respiration if necessary in extreme cases. If ingested, administer plain water; do not induce vomiting -- call a physician.

SECTION VI — REACTIVITY DATA

STABILITY	UNSTABLE		CONDITIONS TO AVOID Avoid smoke from any combustion of product.
	STABLE	X	

INCOMPATIBILITY (Materials to avoid)

HAZARDOUS DECOMPOSITION PRODUCTS

Normally none--however, incomplete burning may yield carbon monoxide. In addition, open decomposition can yield hydrogen chloride and or phosgene.

HAZARDOUS POLYMERIZATION	WILL NOT OCCUR	X	
---------------------------------	----------------	---	--

SECTION VII — SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Absorb spill with sawdust or oil absorbent or soda ash. Catch and collect for recovery as soon as possible. Further flushing and cleaning with a weak alkaline solution (soda ash, baking soda, caustic soda) will aid in neutralizing cresylic acid from the spill.

WASTE DISPOSAL METHOD

Dispose of in accordance with company or local, state and federal regulations.

SECTION VIII — SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify type)

Self-contained breathing apparatus for concentrations above TLV limits.

VENTILATION	LOCAL EXHAUST	SPECIAL
	Yes	----
	MECHANICAL (General)	OTHER
	----	----

PROTECTIVE GLOVES rubber gloves	EYE PROTECTION chemical face shield: goggles
-------------------------------------------	--------------------------------------------------------

OTHER PROTECTIVE EQUIPMENT
Rubber apron to protect skin and clothing. Use protective barrier skin cream.

SECTION IX — SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

Keep away from heat, sparks and open flame. Use adequate ventilation. Avoid contact with skin and eyes.

OTHER PRECAUTIONS If cleaner contacts clothing, change clothes or wash off excess immediately to avoid possible skin irritation. Although product is non-flammable, open flames, welding arcs or other high temperature sources can cause product decomposition. This decomposition can yield hydrogen chloride and/or phosgene.



MATERIAL SAFETY DATA SHEET

AND SAFE HANDLING AND DISPOSAL INFORMATION

PAGE 1 OF 3

ZEP MANUFACTURING COMPANY
FIRST IN MAINTENANCE AND SANITATION

DATE : 10/08/86, ZEP BIG ORANGE
SUPERSEDES: 04/12/86, PRODUCT NUMBER: 0415

SECTION I - EMERGENCY CONTACTS

ZEP MANUFACTURING COMPANY NON-OFFICE HOURS, WEEKENDS, AND HOLIDAYS: AREA CODE 404
P.O. BOX 2015 435-2973, 996-0899, 252-1587, 351-2952, 971-3367
ATLANTA, GEORGIA 30301 LOCAL POISON CONTROL CENTER
TELEPHONE (404) 352-1680 TRANSPORTATION EMERGENCY
BETWEEN 8:00A.M.-5:00P.M. CHEMTREC: TOLL FREE 1-800-424-9300 ALL CALLS RECORDED
(EASTERN TIME ZONE) DISTRICT OF COLUMBIA (202) 483-7616 ALL CALLS RECORDED

SECTION II - HAZARDOUS INGREDIENTS

DESIGNATIONS	TLV (PPM)	EFFECTS (SEE REVERSE)	% IN PROD.
** D-LIMONENE ** orange distillate; citrus terpene; cyclohexene, 1-methyl-4-(1-methylethenyl)-, (R)- CAS# 5989-27-5; RTECS# GW6360000; OSHA PEL N/D	N/D	CBL SEN	> 90
** ALCOHOLS, C11-C15-SECONDARY, ETHOXYLATED ** CAS# 68131-40-8; RTECS# WZ5200000; OSHA PEL N/D	N/D	EIR	< 5
** NONYLPHENOXYPOLY(ETHYLENEOXY)ETHANOL ** poly(oxy-1,2-ethanediyl), alpha-(nonylphenyl)-omega- hydroxy; CAS# 9016-45-9; RTECS# MD905000; OSHA PEL- N/D	N/D	EIR	< 5

NOT USED

SPECIAL NOTE: ADVERSE HEALTH EFFECTS WOULD NOT BE EXPECTED UNDER RECOMMENDED
CONDITIONS OF USE SO LONG AS PRESCRIBED SAFETY PRECAUTIONS ARE PRACTICED.

SECTION III - HEALTH HAZARD DATA

ACUTE EFFECTS OF OVEREXPOSURE:

THIS PRODUCT CAN BE AN EYE IRRITANT. INFLAMMATION OF EYE TISSUE IS CHARACTERIZED
BY REDNESS, WATERING, AND/OR ITCHING.

ONE OF THE INGREDIENTS IN THIS PRODUCT HAS CAUSED SENSITIZATION REACTIONS IN A
SMALL PERCENTAGE OF THE GENERAL POPULATION.



MATERIAL SAFETY DATA SHEET

AND SAFE HANDLING AND DISPOSAL INFORMATION

PAGE 2 OF 3

ZEP MANUFACTURING COMPANY
FIRST IN MAINTENANCE AND SANITATION

DATE : 10/08/86 ZEP BIG ORANGE
SUPERSEDES: 04/12/86 PRODUCT NUMBER: 0415

SECTION III - HEALTH HAZARD DATA (CONTINUED)

CHRONIC EFFECTS OF OVEREXPOSURE:

CONTACT, ESPECIALLY IF PROLONGED OR REPEATED, MAY CAUSE REDDNESS, ITCHING, OR BLISTERING OF THE SKIN.

NONE OF THE HAZARDOUS INGREDIENTS ARE LISTED AS CARCINOGENS BY IARC, NTP, & OSHA

EST'D PEL/TLV: NOT ESTABLISHED PRIMARY ROUTES OF ENTRY: N/A

HMIS CODES: HEALTH 1;FLAM. 2;REACT. 0;PERS. PROTECT. A ;CHRONIC HAZ. NO

FIRST AID PROCEDURES:

SKIN : WASH CONTAMINATED SKIN THOROUGHLY WITH SOAP OR A MILD DETERGENT. APPLY A SKIN CREAM WITH LANOLIN. GET MEDICAL ATTENTION IF IRRITATION PERSISTS.
EYES : IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES, OCCASIONALLY LIFTING UPPER AND LOWER LIDS. GET MEDICAL ATTENTION AT ONCE.
INHALE: MOVE EXPOSED PERSON TO FRESH AIR. IF IRRITATION PERSISTS, GET MEDICAL ATTENTION PROMPTLY.
INGEST: IF THIS PRODUCT IS SWALLOWED, DO NOT INDUCE VOMITING. IF VICTIM IS CONSCIOUS GIVE PLENTY OF WATER TO DRINK. GET MEDICAL ATTENTION AT ONCE.

SECTION IV - SPECIAL PROTECTION INFORMATION

PROTECTIVE CLOTHING : THE USE OF NEOPRENE, NITRILE OR NATURAL RUBBER GLOVES IS STRONGLY RECOMMENDED, ESPECIALLY FOR PROLONGED CONTACT.

EYE PROTECTION : WEAR TIGHT-FITTING SPLASH-PROOF SAFETY GLASSES ESPECIALLY IF CONTACT LENSES ARE WORN.

RESPIRATORY PROTECTION: NO SPECIAL MEASURES ARE REQUIRED.

VENTILATION : NO SPECIAL MEASURES ARE REQUIRED.

SECTION V - PHYSICAL DATA

BOILING POINT (F) : 170-190C RANGE SPECIFIC GRAVITY : 0.844
VAPOR PRESSURE (MMHG): N/A PERCENT VOLATILE BY VOLUME (%) : 93.8
VAPOR DENSITY (AIR=1): N/A EVAPORATION RATE (CCL4 =1): 33
SOLUBILITY IN WATER : EMULSIFIES PH (CONCENTRATE) : N/A
PH (USE DILUTION OF 1:20) : 7.6
APPEARANCE AND ODOR : ORANGE LIQUID WITH A CITRUS ODOR

SECTION VI - FIRE AND EXPLOSION DATA

FLASH POINT (F) (METHOD USED): 121F (TCC)
FLAMMABLE LIMITS LEL N/A UEL N/A
EXTINGUISHING MEDIA : FOAM, DRY CHEMICAL, CO2
SPECIAL FIRE FIGHTING: FIRE EXPOSED DRUMS SHOULD BE COOLED WITH STREAM OF WATER.
UNUSUAL FIRE HAZARDS : NONE



MATERIAL SAFETY DATA SHEET

AND SAFE HANDLING AND DISPOSAL INFORMATION

PAGE 3 OF 3

ZEP MANUFACTURING COMPANY
FIRST IN MAINTENANCE AND SANITATION

DATE : 10/08/86 ZEP BIG ORANGE
SUPERSEDES: 04/12/86 PRODUCT NUMBER: 0415

SECTION VII - R E A C T I V I T Y D A T A

STABILITY : STABLE

INCOMPATIBILITY(AVOID) : HEAT, FLAME, SPARK, STRONG ACIDS AND/OR OXIDIZERS

POLYMERIZATION : WILL NOT OCCUR

HAZARDOUS DECOMPOSITION: CARBON DIOXIDE, CARBON MONOXIDE, AND OTHER UNIDENTIFIED ORGANIC COMPOUNDS.

SECTION VIII - S P I L L A N D D I S P O S A L P R O C E D U R E S

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

IMMEDIATELY ELIMINATE ALL FLAME, IGNITION AND HIGH-HEAT SOURCES. ABSORB SPILL ON INERT ABSORBENT MATERIAL (eg ZEP-O-ZORB). PICK UP AND PLACE RESIDUE IN A CLEAN, D.O.T. SPECIFICATION CONTAINER FOR DISPOSAL. WASH AREA THOROUGHLY WITH A DETERGENT SOLUTION AND RINSE WELL WITH WATER.

WASTE DISPOSAL METHOD:

LIQUIDS CANNOT BE SENT TO LANDFILLS UNLESS SOLIDIFIED. UNUSABLE PRODUCT AND COLLECTED, SPENT MATERIAL MAY REQUIRE DISPOSAL AS A HAZARDOUS WASTE AT A PERMITTED TREATMENT/STORAGE/DISPOSAL FACILITY. IN MOST STATES HAZARDOUS WASTE IN TOTAL AMOUNTS OF 220 LBS. OR LESS PER MONTH MAY BE DISPOSED OF IN A CHEMICAL OR INDUSTRIAL WASTE LANDFILL. CONSULT LOCAL, STATE, AND FEDERAL AGENCIES FOR PROPER DISPOSAL METHOD IN YOUR AREA.

RCRA HAZ. WASTE NOS.: D001

SECTION IX - S P E C I A L P R E C A U T I O N S

PRECAUTIONS TO BE TAKEN WHEN HANDLING AND STORING:

COMBUSTIBLE! STORE AND USE AWAY FROM HEAT, SPARKS, OPEN FLAME, OR ANY SOURCE OF IGNITION.

POST "NO SMOKING" SIGNS ACCORDING TO LOCAL REGULATIONS FOR COMBUSTIBLE LIQUIDS. KEEP PRODUCT AWAY FROM SKIN AND EYES.

STORE TIGHTLY CLOSED CONTAINER IN DRY AREA AT TEMPERATURES BETWEEN 40 AND 120 DEGREES F.

KEEP OUT OF THE REACH OF CHILDREN.

SECTION X - T R A N S P O R T A T I O N D A T A

DOT PROPER SHIPPING NAME

NONE

DOT HAZARD CLASS: N/A

DOT I.D. NUMBER : N/A

DOT LABEL/PLACARD: NONE

EPA TSCA CHEMICAL INVENTORY - ALL INGREDIENTS ARE LISTED

EPA CWA 40CFR PART 117 SUBSTANCE (RQ IN A SINGLE CONTAINER): N/A



TECHNICAL DATA REPORT

from the Research and Development Laboratories of
ZEP MANUFACTURING COMPANY

TD# 405



CLEANER AND DEGREASER

TYPE:

A cleaner and degreaser composed of natural solvents, surfactants, and other detergent components. Designed to remove grease, oil, asphaltic and carbon soils from concrete, metal, and other hard surfaces.

BENEFITS:

POWERFUL: Strong solvents quickly dissolve thick, stubborn deposits of grease, oil, and asphalt from concrete, metal, and other hard surfaces.

VERSATILE: May be used for cleaning equipment, floors, and cold tanks.

EMULSIFIES: Allows deposits to be easily rinsed away with water.

FREE RINSING: Leaves no residue.

HARMLESS TO MOST METALS: Will not harm most metal surfaces when used as directed.

APPLICATIONS:

Ideal for degreasing or removing oily deposits from a wide range of automotive and industrial equipment, tools and presses, and marine equipment. May damage paint. (Test on an inconspicuous area prior to use.)

SPECIFICATIONS:

Physical Form	Slightly thick, water-solvent liquid blend
Color	Clear, yellowish
Fragrance	Citrus
pH (1:10)	9.0 - 9.5
Density-Specific Gravity	7.98 lbs./gal. - 0.957
Flash Point (TCC)	122°F
Shelf Life	1 year minimum
D.O.T. Shipping Label	None



BIG ORANGE

TECHNICAL LITERATURE

PRODUCT SPECIFICATIONS

TYPE: An organic non-petroleum cleaner and degreaser used as a replacement for petroleum cleaners and degreasers containing a citrus solvent, surfactants, and emulsifiers.

BENEFITS:

LOW TOXICITY: Naturally occurring citrus solvent is less hazardous than petroleum distillates, chlorinated solvents or butyl cellosolve.

HIGH SOLVENCY: Comparable solvency with petroleum distillates and chlorinated solvents.

PLEASANT FRAGRANCE: Leaves a fresh citrus fragrance; no objectionable petroleum solvent odors. Particularly useful where poor ventilation is a problem.

LESS HAZARDOUS DRAIN CLEANER: Does not contain any caustics, acids, petroleum distillates, chlorinated hydrocarbons or chlorinated aromatic solvents.

BIODEGRADABLE: All detergents or emulsifiers in Big Orange are completely biodegradable.

USDA AUTHORIZED: Authorized for use on all surfaces in inedible product processing areas, non-processing areas, and/or exterior areas of federally inspected meat and poultry plants.

APPLICATIONS:

Formulated to degrease motors, engine parts, molds, dies, and other industrial equipment. Effectively emulsifies tar and asphalt, and removes many industrial glues and protective coatings. Ideal for use in drain pipes and grease traps. Good cleaner for unpainted concrete floors, and for removing scuff and rubber tire marks. May damage some plastic and/or painted surfaces. Test on an inconspicuous area before general use.

SPECIFICATIONS:

Physical Form	Thin, citrus solvent-based liquid
Color	Clear, orange
Fragrance	Citrus
pH (use dilution of 2 oz./gal.)	7.5 - 8.5
Density/Specific Gravity	7.00 lbs./gallon - .840
Flash Point (TCC)	121°F.
Shelf Life	1 year minimum
D.O.T. Shipping Label	None

MEN LABEL

1287C

PROD. #0415

ZEP BIG ORANGE

CITRUS INDUSTRIAL DEGREASER AND DEODORIZER AND GRAFFITI REMOVER

CONTAINS NO PETROLEUM OR CHLORINATED HYDROCARBON SOLVENTS

CONTROL NO.

NET CONTENTS/GALS.

Zep Big Orange is a blend of naturally occurring organic degreasers, detergents, and emulsifiers for easy dilution with water. Formulated for the transportation industry, food service industry, hotel and motel industry, sewage treatment plants, garbage trucks and dumpsters.

DIRECTIONS:

DEGREASER FOR CONCRETE FLOORS AND EQUIPMENT — Floors: Apply undiluted product or prediluted with water up to 2 oz. per gallon to soiled area depending on amount of soil. Scrub as necessary with brush or floor machine. Rinse thoroughly. Pick up with mop and wringer or wet pick-up vacuum. Greasy Equipment and Parts: Brush, wipe or spray undiluted product onto soiled areas, agitate where necessary. Rinse thoroughly with strong stream of water, preferably high pressure or steam. **NOTE:** May damage some plastic, rubber, and/or painted surfaces. Test on an inconspicuous area before general use.

SEWAGE TREATMENT AND RENDERING PLANTS: May be used straight or prediluted with water before use. May be applied directly or set up on automatic drip for constant control.

DRAIN AND GREASE TRAPS: To unclog drains pour 8 oz. of Zep Big Orange into drain and allow to stand for one hour. Flush with hot water. To prevent grease buildup, once a week pour 2 to 4 oz. Zep Big Orange into drains and after one hour, flush with water. **CAUTION:** DO NOT use Zep Big Orange in conjunction with acidic (Zep Flo) drain openers.

ODOR CONTROL: For general odor control, dilute 4 oz. of Zep Big Orange per gallon of water and spray refuse dumps, trash cans, dumpsters, etc.

GRAFFITI REMOVAL AND CLINGING DEGREASER: Prepare a thickened emulsion by mixing 3 parts Zep Big Orange with 1 part cold water.

Agitate thoroughly by stirring or shaking to develop a milky, homogeneous, thick liquid. Pour emulsion into a low pressure sprayer, such as a Zep M-6400, for small jobs; or Zep Model 9-C or 3000P for larger jobs. Thoroughly coat graffiti with the emulsion. Allow it to remain in contact for 5-10 minutes. Agitate stubborn spots with a stiff brush or nylon scouring pad when necessary, and when no danger of scratching surface exists. Rinse thoroughly with a strong stream of water.

FOR INDUSTRIAL AND INSTITUTIONAL USE ONLY
NOT FOR HOUSEHOLD USE OR RESALE

WARNING!

Contains nonylphenoxy poly(ethyleneoxy) ethanol; alcohols, C₁₁-C₁₅-secondary, ethoxylated; and d-limonene.

COMBUSTIBLE CAUSES EYE IRRITATION

Can cause severe eye irritation or inflammation. DO NOT swallow this product. Exposure may aggravate existing skin or respiratory disorders. Further information on the effects of overexposure is included on the Material Safety Data Sheet, which is available upon request.

Zep advocates limiting exposure to all chemical products. Wear tight-fitting safety glasses during product use, especially contact lens wearers. The use of natural rubber, nitrile, neoprene, or other resistant gloves is strongly recommended for prolonged use. Use product in well ventilated areas only. Open window/doors and use exhaust fans in enclosed spaces. Remove contaminated clothing promptly and DO NOT rewear until thoroughly cleaned. After handling wash hands thoroughly with soap and water.

FIRST AID:

EYES: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.

SKIN: Wash contaminated skin immediately and thoroughly with soap or mild detergent. Apply a skin cream. Consult a physician if irritation develops.

INHALATION: Move exposed person to fresh air. If irritation persists, get medical attention immediately.

INGESTION: If product is swallowed, DO NOT induce vomiting. If vomiting occurs, keep head below hips to prevent aspiration (breathing) of liquid into the lungs. Get emergency medical attention immediately.

IN CASE OF A LARGE SPILL: Absorb product on an inert absorbent material, such as ZEP-O-ZORB, and deposit in a clean, sealable, D.O.T. specification container for disposal as a hazardous waste. Thoroughly clean area with detergent solution and rinse well with water.

COMBUSTIBLE: Keep away from heat, spark, open flame or any source of ignition. Store in a cool area away from direct sunlight. Keep container tightly closed at all times when not in use to decrease evaporation of volatile solvents.

KEEP OUT OF REACH OF CHILDREN

American Made Proudly
ZEP MANUFACTURING COMPANY
Division of National Service Industries, Inc.
ATLANTA, GEORGIA 30301

CLEAN ACROSS AMERICA AND THROUGHOUT THE WORLD

BEFORE USING THIS PRODUCT, PLEASE READ THIS ENTIRE LABEL.

PROD. #0419

1088B

NET CONTENTS/GALS.

CONTROL NO.



CLEANER AND DEGREASER

ZEP CITRA CLEAN is a blend of a natural solvent, surfactants, and other detergent components designed to remove grease, oil, asphaltic, and carbon soils from concrete, metal, and other hard surfaces.

DIRECTIONS:

EQUIPMENT CLEANING — Depending on the severity of the soils, use straight or up to 1 to 5 with water.

FLOOR CLEANING — Use at up to 1 to 20 depending on nature of soils.

COLD TANK CLEANING — Use straight or up to 1 to 1 for cleaning of metal parts.

NOTE: May damage some plastic, rubber, and/or painted surfaces. Test on an inconspicuous area before general use.

WARNING!

Contains d-limonene, dipropylene glycol monomethyl ether, and nonylphenoxy poly(ethyleneoxy) ethanol.
COMBUSTIBLE
CAUSES IRRITATION

Can cause severe eye irritation or inflammation. Inhalation of spray mists or vapors may cause respiratory tract irritation. DO NOT swallow this product. Avoid breathing vapors or spray mist. Exposure may aggravate existing skin or respiratory disorders. Further information on the effects of overexposure is included on the Material Safety Data Sheet, which is available upon request.

Zep advocates limiting exposure to all chemical products. Wearing of tight-fitting safety goggles is strongly recommended, especially for contact lens wearers. Wear natural rubber, nitrile, neoprene, or other resistant gloves and a rubber apron if splashing can occur. Use product in well ventilated areas only, open window/doors and use exhaust fans in enclosed spaces. Remove contaminated clothing promptly and DO NOT rewear until thoroughly cleaned. After handling wash hands thoroughly with soap and water.

FIRST AID:

EYES: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.

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COMBUSTIBLE: Keep away from heat, spark, open flame or any source of ignition. Store in a cool area away from direct sunlight. Keep container tightly closed at all times when not in use to decrease evaporation of volatile solvents.

**KEEP OUT OF REACH OF CHILDREN
FOR INDUSTRIAL AND INSTITUTIONAL USE ONLY
NOT FOR HOUSEHOLD USE OR RESALE**

ZEP MANUFACTURING COMPANY

Division of National Service Industries, Inc.

ATLANTA, GEORGIA 30301

CLEAN ACROSS AMERICA AND THROUGHOUT THE WORLD™

This product is designed exclusively for industrial and institutional use by trained, professional maintenance personnel. Label directions and precautions must be followed exactly. Zep Manufacturing Company will not be responsible for any injury, loss, or damage, if product is used in any manner not in compliance with label directions, or if precautions are not observed.

SPECIMEN LABEL

UPDATED - SOLVENT
NO LONGER IN
USE

U.S. DEPARTMENT OF LABOR
Occupational Safety and Health Administration

REV. 7-9-84 Form Approved OSHA
OMB No. 44-R1387

MATERIAL SAFETY DATA SHEET

Required under USDL Safety and Health Regulations for Ship Repairing,
Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

SECTION I

MANUFACTURER'S NAME Safety-Kleen Corporation		EMERGENCY TELEPHONE NO. 312/697-8460
ADDRESS (Number, Street, City, State, and Zip Code) 777 Big Timber Road, Elgin, IL 60120		
CHEMICAL NAME AND SYNONYMS Mineral Spirits		TRADE NAME AND SYNONYMS Safety-Kleen 105 Solvent - MS
CHEMICAL FAMILY Petroleum Hydrocarbon Fraction	FORMULA S-K Part #6617	

SECTION II — HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
PIGMENTS			BASE METAL		
CATALYST			ALLOYS		
VEHICLE			METALLIC COATINGS		
SOLVENTS 99.9+	100	100	FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES Dye	0.003	100	OTHERS		
OTHERS Anti-Static Additive	1ppm				
HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES				%	TLV (Units)

SECTION III — PHYSICAL DATA

BOILING POINT (°F.)	310-400°F	SPECIFIC GRAVITY (H ₂ O = 1)	0.775-0.797
VAPOR PRESSURE (mm Hg.)	2mm Hg @ 68°F	PERCENT. VOLATILE BY VOLUME (%)	100%
VAPOR DENSITY (AIR = 1)	4.9	EVAPORATION RATE (toluene = 1)	0.02
SOLUBILITY IN WATER	Negligible	%Aromatics (total)	Less than 16%
APPEARANCE AND ODOR Green Clear			

SECTION IV — FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	105°F TCC	FLAMMABLE LIMITS	LeI	UeI
			0.7	6.0
EXTINGUISHING MEDIA	CO ₂ foam, dry chemical, water (mist only)			
SPECIAL FIRE FIGHTING PROCEDURES	None			
UNUSUAL FIRE AND EXPLOSION HAZARDS	None			



MATERIAL SAFETY DATA SHEET

AND SAFE HANDLING AND DISPOSAL INFORMATION

PAGE 1 OF 2

MANUFACTURING COMPANY
IN MAINTENANCE PRODUCTS

DATE : 08/14/87 ZEP FORMULA 9862
SUBSEQUENT: 05/15/94 PRODUCT NUMBER: 0427

SECTION I - EMERGENCY CONTACTS

EP MANUFACTURING COMPANY NON-OFFICE HOURS, WEEKENDS, AND HOLIDAYS: AREA CODE 404
P.O. BOX 2015 435-2973, 994-0899, 252-1587, 351-2952, 445-9226
ATLANTA, GEORGIA 30301 LOCAL POISON CONTROL CENTER
TELEPHONE (404)352-1680 TRANSPORTATION EMERGENCY
BETWEEN 8:00A.M.-5:00P.M. CHEMTREC: TOLL FREE 1-800-424-9300 ALL CALLS RECORDED
(EASTERN TIME ZONE) DISTRICT OF COLUMBIA (202)483-7616 ALL CALLS RECORDED

SECTION II - HAZARDOUS INGREDIENTS

DESIGNATIONS	TLV (PPM)	EFFECTS (SEE REVERSE)	% IN PROD.
** SODIUM HYDROXIDE ** CAUSTIC SODA; SODA LYE; CAS# 310-73-2; RTECS# WB4900000; CEILING LIMIT= 2 MG/M3 FOR POWDERS ONLY)	N/D	TOX COR	50-60
** SODIUM CARBONATE ** SODA ASH; CARBONIC ACID, DI- SODIUM SALT; CAS# 497-19-8; RTECS# VZ4050000; DUST LIMIT = 15 MG/M3	N/D	IRR	20-30
** TRIFTHANOLAMINE ** TEA; 2,2',2"-NITRILOTRIETHANOL; CAS# 102-71-6; RTECS# KL9275000	N/D	EIR	< 5
** ALPHA-DOCECYL-OMEGA-HYDROXY-POLY(OXY-1,2-ETHANE- 1YL)PHOSPHATE ** CAS# 39464-66-9; RTECS# NONE	N/D	COR	< 5

NOT OF AS

SPECIAL NOTE: ADVERSE HEALTH EFFECTS WOULD NOT BE EXPECTED UNDER RECOMMENDED
CONDITIONS OF USE SO LONG AS PRESCRIBED SAFETY PRECAUTIONS ARE PRACTICED.

SECTION III - HEALTH HAZARD DATA

ACUTE EFFECTS OF OVEREXPOSURE:

IRRITATIVE TO SKIN AND EYES. THE AMOUNT OF TISSUE DAMAGE DEPENDS ON LENGTH OF
CONTACT. EYE CONTACT CAN RESULT IN CORNEAL DAMAGE OR BLINDNESS. SKIN CONTACT CAN
PRODUCE INFLAMMATION AND BLISTERING. INHALATION OF DUST WILL PRODUCE IRRITATION
OF GASTROINTESTINAL OR RESPIRATORY TRACT, CHARACTERIZED BY BURNING, SNEEZING AND
CUGHING. SEVERE OVER-EXPOSURE CAN PRODUCE LUNG DAMAGE, CHOKING, UNCONSCIOUSNESS
OR DEATH.

INGREDIENTS IN THIS PRODUCT MAY AGGRAVATE EXISTING SKIN, EYE, OR RESPIRATORY
DISORDERS.



MATERIAL SAFETY DATA SHEET

AND SAFE HANDLING AND DISPOSAL INFORMATION

PAGE 1 OF 3

MANUFACTURING COMPANY
IN MAINTENANCE PRODUCTS

DATE : 04/21/89 ULTRASONIC SM PARTS CLNR/CARB
SUPERSEDES: 07/24/87 PRODUCT NUMBER: 0618

SECTION I - EMERGENCY CONTACTS

ZEP MANUFACTURING COMPANY NON-OFFICE HOURS, WEEKENDS, AND HOLIDAYS: AREA CODE 404
P.O. BOX 2015 435-2973, 996-0899, 252-1587, 351-2952, 445-9226
ATLANTA, GEORGIA 30301 LOCAL POISON CONTROL CENTER
TELEPHONE (404) 352-1680 TRANSPORTATION EMERGENCY
BETWEEN 8:00A.M.-5:00P.M. CHEMTREC: TOLL FREE 1-800-424-9300 ALL CALLS RECORDED
(EASTERN TIME ZONE) DISTRICT OF COLUMBIA (202) 483-7616 ALL CALLS RECORDED

SECTION II - HAZARDOUS INGREDIENTS

DESIGNATIONS	TLV (PPM)	EFFECTS (SEE REVERSE)	% IN PROD.
@** ETHYLENE GLYCOL MONOBUTYL ETHER ** 2-butoxyethan- ol; butyl cellosolve; CAS# 111-76-2; RTECS# KJ8575000; OSHA PEL (SKIN)-50 ppm.	25	TOX IRR CBL	< 5
** SODIUM METASILICATE ** silicic acid (H ₂ -Si-O ₃) di- sodium salt; water glass; CAS# 6834-92-0; RTECS# VV9275000; OSHA Dust Limit-2mg/m ³ (for powders only).	N/D	COR	< 5
** SODIUM DODECYLBENZENE SULFONATE ** linear alkyl aryl sodium sulfonate; CAS# 25155-30-0; RTECS# DB6825000; OSHA PEL N/D	N/D	IRR	< 5

NO LONGER USED
12-94 -

@ IDENTIFIES CHEMICALS LISTED UNDER SARA-SECTION 313 FOR RELEASE REPORTING.

SPECIAL NOTE: ADVERSE HEALTH EFFECTS WOULD NOT BE EXPECTED UNDER RECOMMENDED
CONDITIONS OF USE SO LONG AS PRESCRIBED SAFETY PRECAUTIONS ARE PRACTICED.

SECTION III - HEALTH HAZARD DATA

ACUTE EFFECTS OF OVEREXPOSURE:

PRODUCT IN CONCENTRATED FORM IS A SEVERE EYE IRRITANT. OVER-EXPOSURE MAY LEAD TO
EYE TISSUE DAMAGE WHICH CAN BE PERMANENT. SKIN CONTACT MAY PRODUCE IRRITATION.
OVER-EXPOSURE BY INHALATION MAY CAUSE RESPIRATORY IRRITATION.
INGREDIENTS IN THIS PRODUCT MAY AGGRAVATE EXISTING SKIN, EYE, OR RESPIRATORY
DISORDERS.



MATERIAL SAFETY DATA SHEET

AND SAFE HANDLING AND DISPOSAL INFORMATION

PAGE 2 OF 3

MANUFACTURING COMPANY
IN MAINTENANCE PRODUCTS

DATE : 04/21/89 ULTRASONIC SM PARTS CLNR/CARB
SUPERSEDES: 07/24/87 PRODUCT NUMBER: 0618

SECTION III - HEALTH HAZARD DATA (CONTINUED)

CHRONIC EFFECTS OF OVEREXPOSURE:

REPEATED OR PROLONGED SKIN CONTACT MAY PRODUCE CHRONIC INFLAMMATION OR DERMATITIS, CHARACTERIZED BY REDNESS, SCALING, OR ITCHING. REPEATED EYE EXPOSURE MAY PRODUCE CHRONIC INFLAMMATION OF THE EYE OR CORNEAL DAMAGE.

ANIMAL STUDIES INDICATE A POTENTIAL FOR LIVER, KIDNEY, OR RED BLOOD CELL DAMAGE. RELEVANCE OF THESE STUDIES OR EXPOSURE LEVELS WHICH MIGHT PRODUCE THESE EFFECTS IN HUMANS HAS NOT BEEN ESTABLISHED.

NONE OF THE INGREDIENTS ARE LISTED AS CARCINOGENS BY IARC, NTP, OR OSHA.

EST'D PEL/TLV: NOT ESTABLISHED PRIMARY ROUTES OF ENTRY: INH, SKIN.

HMS CODES: HEALTH 2;FLAM. 0;REACT. 0;PERS. PROTECT. B ;CHRONIC HAZ. YES

FIRST AID PROCEDURES:

SKIN : IMMEDIATELY FLUSH CONTAMINATED SKIN WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. GET MEDICAL ATTENTION IF IRRITATION DEVELOPS.

EYES : IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES, OCCASIONALLY LIFTING UPPER AND LOWER LIDS. GET MEDICAL ATTENTION AT ONCE.

INHALE: MOVE EXPOSED PERSON TO FRESH AIR. IF IRRITATION PERSISTS, GET MEDICAL ATTENTION PROMPTLY.

INGEST: IF THIS PRODUCT IS SWALLOWED, DO NOT INDUCE VOMITING. IF VICTIM IS CONSCIOUS GIVE PLENTY OF WATER TO DRINK. GET MEDICAL ATTENTION AT ONCE.

SECTION IV - SPECIAL PROTECTION INFORMATION

PROTECTIVE CLOTHING : WEAR NITRILE GLOVES OR USE GLOVES WITH DEMONSTRATED RESISTANCE TO THE INGREDIENTS IN THIS PRODUCT.

EYE PROTECTION : WEAR TIGHT-FITTING SPLASH-PROOF SAFETY GLASSES ESPECIALLY IF CONTACT LENSES ARE WORN.

RESPIRATORY PROTECTION: KEEP FACE AWAY FROM SPRAY MIST AND DO NOT BREATHE VAPORS.

VENTILATION : IF VAPORS ARE DETECTED, VENTILATE WORK AREA BY OPENING WINDOWS AND USING EXHAUST FANS.

SECTION V - PHYSICAL DATA

BOILING POINT (F)	: APPROX. 220F	SPECIFIC GRAVITY	: 1.05
VAPOR PRESSURE(MMHG):	N/D	PERCENT VOLATILE BY VOLUME (%)	: 85%
VAPOR DENSITY(AIR=1):	N/D	EVAPORATION RATE(WATER =1):	1.0
SOLUBILITY IN WATER	: COMPLETE	PH(CONCENTRATE)	: 12.5-13.0
		PH(USE DILUTION OF 1% SOLUTION):	11.0-11.5

APPEARANCE AND ODOR : A THIN, DARK BLUE LIQUID WITH SLIGHT "BUTYL" ODOR.

SECTION VI - FIRE AND EXPLOSION DATA

FLASH POINT(F) (METHOD USED): N/D ()

FLAMMABLE LIMITS LEL N/A UEL N/A

EXTINGUISHING MEDIA : NON-COMBUSTIBLE

SPECIAL FIRE FIGHTING: WEAR SELF-CONTAINED POSITIVE PRES. BREATHING APPARATUS.

UNUSUAL FIRE HAZARDS : NONE



MATERIAL SAFETY DATA SHEET

AND SAFE HANDLING AND DISPOSAL INFORMATION

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MANUFACTURING COMPANY
IN MAINTENANCE PRODUCTS

DATE : 04/21/89 ULTRASONIC SM PARTS CLNR/CARB
SUPERSEDES: 07/24/87 PRODUCT NUMBER: 0618

SECTION VII - REACTIVITY DATA

STABILITY : STABLE
INCOMPATIBILITY(AVOID) : STRONG ACIDS AND OXIDIZING AGENTS
POLYMERIZATION : WILL NOT OCCUR.
HAZARDOUS DECOMPOSITION: CARBON DIOXIDE, CARBON MONOXIDE, AND OTHER UNIDENTIFIED ORGANIC COMPOUNDS.

SECTION VIII - SPILL AND DISPOSAL PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:
OBSERVE SAFETY PRECAUTIONS IN SECTIONS 4 & 9 DURING CLEAN-UP. ABSORB SPILL ON AN INERT ABSORBENT MATERIAL (eg ZEP-O-ZORB); PICK UP AND PLACE IN A CLEAN D.O.T. SPECIFICATION CONTAINER FOR DISPOSAL. WASH AREA THOROUGHLY WITH A DETERGENT SOLUTION AND THEN RINSE WELL WITH WATER.

WASTE DISPOSAL METHOD:

LIQUIDS CANNOT BE SENT TO LANDFILLS UNLESS SOLIDIFIED. UNUSABLE PRODUCT AND SOME COLLECTED, SPENT USE-DILUTIONS MAY REQUIRE DISPOSAL AS A HAZARDOUS WASTE AT A PERMITTED TREATMENT/STORAGE/DISPOSAL FACILITY. IN MOST STATES HAZARDOUS WASTES IN TOTAL AMOUNTS OF 220 LBS. OR LESS PER MONTH MAY BE DISPOSED OF IN A CHEMICAL OR INDUSTRIAL WASTE LANDFILL. IF COMPANY EFFLUENT IS ULTIMATELY TREATED BY A PUBLICLY OWNED TREATMENT WORKS, NEUTRALIZATION OF SPENT TANK-SOLUTIONS WITH SUBSEQUENT DISCHARGE TO THE SEWER MAY BE POSSIBLE. CONSULT LOCAL, STATE AND FEDERAL AGENCIES FOR PROPER DISPOSAL METHOD IN YOUR AREA.

RCRA HAZ. WASTE NOS.: D002 (SEE ABOVE)

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN WHEN HANDLING AND STORING:
STORE TIGHTLY CLOSED CONTAINER IN A DRY AREA AT TEMPS. BETWEEN 40-120 DEGREES F.
KEEP PRODUCT AWAY FROM SKIN AND EYES.
DO NOT BREATHE SPRAY MISTS OR VAPORS.
CLOTHING OR SHOES WHICH BECOME CONTAMINATED WITH SUBSTANCE SHOULD BE REMOVED PROMPTLY AND NOT REWORN UNTIL THOROUGHLY CLEANED.
KEEP OUT OF THE REACH OF CHILDREN.

SECTION X - TRANSPORTATION DATA

DOT PROPER SHIPPING NAME

NONE

HAZARD CLASS: N/A

I.D. NUMBER : N/A

DOT LABEL/PLACARD: NONE

EPA TSCA CHEMICAL INVENTORY - ALL INGREDIENTS ARE LISTED

EPA CWA 40CFR PART 117 SUBSTANCE(OR IN A SINGLE CONTAINER): SODIUM DODECYLBENZENE SULFONATE, 1000#



MATERIAL SAFETY DATA SHEET

AND SAFE HANDLING AND DISPOSAL INFORMATION

PAGE 2 OF 3

MANUFACTURING COMPANY
ST IN MAINTENANCE PRODUCTS

DATE : 08/14/87 ZEP FORMULA 9552
SUPERSEDES: 05/15/84 PRODUCT NUMBER: 0427

SECTION III - HEALTH HAZARD DATA (CONTINUED)

CHRONIC EFFECTS OF OVEREXPOSURE:

REPEATED EXPOSURE OF THE EYES TO A LOW LEVEL OF DUST CAN PRODUCE EYE IRRITATION. REPEATED SKIN EXPOSURE CAN PRODUCE LOCAL SKIN DESTRUCTION, OR DERMATITIS. REPEATED INHALATION OF DUST CAN PRODUCE VARYING DEGREES OF RESPIRATORY IRRITATION OR LUNG DAMAGE.

NONE OF THE INGREDIENTS ARE LISTED AS CARCINOGENS BY IARC, NTP, OR OSHA.

EST'D PEL/TLV: NOT ESTABLISHED PRIMARY ROUTES OF ENTRY: N/A

HMIS CODES: HEALTH 3; FLAM. 0; REACT. 0; PERS. PROTECT. 0; CHRONIC HAZ. YES

FIRST AID PROCEDURES:

SKIN : IMMEDIATELY FLUSH CONTAMINATED SKIN WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. GET MEDICAL ATTENTION IMMEDIATELY.

EYES : IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. OCCASIONALLY LIFTING UPPER AND LOWER LIDS. GET MEDICAL ATTENTION AT ONCE.

INHALE: MOVE VICTIM TO FRESH AIR. FLUSH MOUTH AND NASAL PASSAGES WITH WATER REPEATEDLY. GET MEDICAL ATTENTION IF IRRITATION PERSISTS.

INGEST: IF THIS PRODUCT IS SWALLOWED, DO NOT INDUCE VOMITING. IF VICTIM IS CONSCIOUS GIVE PLENTY OF WATER TO DRINK. GET MEDICAL ATTENTION AT ONCE.

SECTION IV - SPECIAL PROTECTION INFORMATION

PROTECTIVE CLOTHING : WEAR RUBBER, NEOPRENE, OR NITRILE GLOVES, ALKALI RESISTANT FOOTWEAR, FACE SHIELD, APRON, AND ARM COVERINGS.

EYE PROTECTION : WEAR SPLASH-PROOF SAFETY GOGGLES ESPECIALLY IF CONTACT LENSES ARE WORN.

RESPIRATORY PROTECTION: USE NIOSH-APPROVED DUST MASK IF DUST IS PRESENT.

VENTILATION : IF DUST IS DETECTED, VENTILATE WORK AREA BY OPENING WINDOWS AND USING EXHAUST FANS.

SECTION V - PHYSICAL DATA

BILING POINT (F) : N/A	SPECIFIC GRAVITY : N/A
APOR PRESSURE(MMHG): N/A	PERCENT VOLATILE BY VOLUME (%) : < 0.1
APOR DENSITY(AIR=1): N/A	EVAPORATION RATE(=1): N/A
SOLUBILITY IN WATER : 1.5 LB./GAL.	PH(CONCENTRATE) : N/A
	PH(USE DILUTION OF 1% SOLUTION) : 13.0-13.3

APPEARANCE AND ODOR : WHITE, FREE-FLOWING GRANULATED POWDER WITH STRONG ODOR.

SECTION VI - FIRE AND EXPLOSION DATA

FLASH POINT(F) (METHOD USED): NONE

FLAMMABLE LIMITS LEL N/A UEL N/A

EXTINGUISHING MEDIA : NON-COMBUSTIBLE.

SPECIAL FIRE FIGHTING: WEAR SELF-CONTAINED POSITIVE PRES. BREATHING APPARATUS.

UNUSUAL FIRE HAZARDS : NONE



MATERIAL SAFETY DATA SHEET

AND SAFE HANDLING AND DISPOSAL INFORMATION

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MANUFACTURING COMPANY
IN MAINTENANCE PRODUCTS

DATE : 08/14/87 ZEP FORMULA 9862
SUPERSEDES: 05/15/84 PRODUCT NUMBER: 0427

SECTION VII - REACTIVITY DATA

STABILITY : STABLE
INCOMPATIBILITY(AVOID) : STRONG OXIDIZERS, ACIDS, AND ACTIVE METALS
POLYMERIZATION : WILL NOT OCCUR.
HAZARDOUS DECOMPOSITION: CARBON DIOXIDE, CARBON MONOXIDE AND TOXIC/CORROSIVE FUMES AS OXIDES OF PHOSPHOROUS.

SECTION VIII - SPILL AND DISPOSAL PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:
OBSERVE SAFETY PRECAUTIONS IN SECTIONS 4 & 9 DURING CLEAN-UP. SWEEP POWDER OR ABSORB SPILLED TANK-SOLUTION ON INERT ABSORBENT MATERIAL (EG ZEP-O-ZORB) AND PLACE IN A CLEAN D.O.T. SPECIFICATION CONTAINER FOR DISPOSAL. WASH AREA THOROUGHLY WITH A DETERGENT SOLUTION AND RINSE WELL WITH WATER.

WASTE DISPOSAL METHOD:

LIQUIDS CANNOT BE SENT TO LANDFILLS UNLESS SOLIDIFIED. NEVER DISPOSE OF THIS PRODUCT WITH GENERAL WASTE. UNUSABLE PRODUCT AND SPENT TANK-SOLUTIONS MAY REQUIRE DISPOSAL AS A HAZARDOUS WASTE AT A PERMITTED TREATMENT/STORAGE/DISPOSAL FACILITY. IN MOST STATES, HAZARDOUS WASTES IN TOTAL AMOUNTS OF 220 LBS. OR LESS PER MONTH MAY BE DISPOSED OF IN A CHEMICAL OR INDUSTRIAL WASTE LANDFILL. IF ANY EFFLUENT IS ULTIMATELY TREATED BY A PUBLICLY OWNED TREATMENT WORKS, THE SOLIDIFICATION OF SPENT TANK-SOLUTIONS WITH SUBSEQUENT DISCHARGE TO SEWER MAY BE PERMISSIBLE. CONSULT LOCAL, STATE, AND FEDERAL AGENCIES FOR PROPER DISPOSAL METHOD IN YOUR AREA.

CRA HAZ. WASTE NOS.: D002 (SEE ABOVE)

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN WHEN HANDLING AND STORING:
STORE TIGHTLY CLOSED CONTAINER IN A DRY AREA AT TEMPERATURES BETWEEN 40 - 120 F. DEGREES.
STORE AWAY FROM STRONG ACIDS AND OXIDIZING COMPOUNDS.
KEEP PRODUCT AWAY FROM SKIN AND EYES.
DO NOT BREATHE DUST.
CLOTHING OR SHOES WHICH BECOME CONTAMINATED WITH SUBSTANCE SHOULD BE REMOVED PROMPTLY AND NOT REWORN UNTIL THOROUGHLY CLEANED.
ADD CHEMICAL TO SOLUTION SLOWLY.
KEEP OUT OF THE REACH OF CHILDREN.

SECTION X - TRANSPORTATION DATA

1) PROPER SHIPPING NAME
CORROSIVE SOLID, NOS
2) HAZARD CLASS: CORROSIVE MATERIAL
3) D.O. NUMBER : UN1759 DOT LABEL/PLACARD: CORROSIVE
4) TSCA CHEMICAL INVENTORY - ALL INGREDIENTS ARE LISTED
5) CWA 40CFR PART 117 SUBSTANCE(S) IN A SINGLE CONTAINER: SODIUM HYDROXIDE-000#

Hydrochloric Acid

MATERIAL SAFETY DATA SHEET

AND SAFETY INFORMATION

MANUFACTURING COMPANY
 IDENTIFICATION

DATE
 SUPERSEDED
 PRODUCT NUMBER: 1091

EMERGENCY CONTACT FORMULA 6556

MANUFACTURING COMPANY NON-EMERGENCY PHONE (24 HOURS) 252-1557, 435-2111, 919-486-2552, 919-486-2553
 FAX 919-486-2552, 919-486-2553
 A GEORGIA 30301 LOCAL POISON CONTROL CENTER
 PHONE (404) 352-1680 TRANSPORTATION EMERGENCY
 (IN B OVA M - 5:00 P. M. CHEMTREC, TOLL FREE 1-800-424-9300 ALL CALLS RECORDED,
 (ERN TIME ZONE) DISTRICT OF COLUMBIA (202) 462-7015 ALL CALLS RECORDED

SECTION II - HAZARDOUS INGREDIENTS

IDENTIFICATION

HYDROCHLORIC ACID ** muriatic acid; hydrogen
 chloride; hydrochloride; CAS# 7647-01-6, RTECS#
 H5000

TLV	EFFECTS	% IN
1000	(SEE REVERSE) PROD.	
1	TOX COR	25-35

286-8120

NO LONGER IN USE

12-94

SECTION III - HEALTH HAZARD DATA

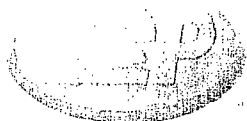
1. ACUTE OVEREXPOSURE.

1.1. ACUTE OVEREXPOSURE DESTROY TISSUE BY DIRECT CHEMICAL ACTION. TISSUE PROTEINS CAN BE DESTROYED ON CONTACT.

1.2. ACUTE TOXIC DOSES BY INGESTION PRODUCE GASTROINTESTINAL CORROSION WITH BURNING PAIN IN THE MOUTH AND DIGESTIVE TRACT FOLLOWED BY VOMITING AND ASPHYXIA MAY OCCUR FROM SWELLING OF THE BACK OF THE THROAT.

1.3. ACUTE INHALATION OF FUMES CAN CAUSE LUNG ABBLEBS WITH COUGHING, CHOKING, AND (6-8 HOURS) PULMONARY EDEMA WHICH MAY PRODUCE ASPHYXIA.

1.4. CONTACT CAN PRODUCE BURNS WHICH PENETRATE THE FULL THICKNESS OF THE SKIN. CONJUNCTIVAL EDEMA AND CORNEAL DESTRUCTION CAN RESULT FROM EVEN DILUTE IN THE EYES.



MATERIAL SAFETY DATA SHEET

DATE: _____ PRODUCT NAME: _____
 SUPERSEDED BY: _____ CAS NUMBER: 100-10-6

HEALTH HAZARD DATA (CONTINUED)

CHRONIC OVEREXPOSURE
 EXPOSURE TO ACID FUMES MAY CAUSE IRRITATION OF THE UPPER RESPIRATORY TRACT, NASAL ULCERATION, BRONCHIAL INFLAMMATION, AND EVENTUALLY ATTACK OF BRONCHITIS AND GASTROINTESTINAL DISTURBANCES. ACUTE AND CHRONIC IRRITATION, ESPECIALLY IF PROLONGED OR REPEATED, MAY CAUSE TEARRING AND BURNING OF THE IRRITATION OF THE NOSE AND THROAT, AND REDNESS, ITCHING OR BURNING OF THE SKIN.

LETHAL DOSE: 5 PPM

ESTIMATED LD50 (MG/KG): NOT ESTABLISHED

FIRST AID PROCEDURES:

IMMEDIATELY FLUSH CONTAMINATED SKIN WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. GET MEDICAL ATTENTION IMMEDIATELY.
 IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES, OCCASIONALLY LIFTING UPPER AND LOWER LIDS. GET MEDICAL ATTENTION AT ONCE.
 MOVE EXPOSED PERSON TO FRESH AIR AT ONCE. IF BREATHING HAS STOPPED, PERFORM ARTIFICIAL RESPIRATION. GET MEDICAL ATTENTION IMMEDIATELY.
 IF THIS PRODUCT IS SWALLOWED, DO NOT INDUCE VOMITING. IF VOMITING IS CONSIDERED, GIVE PLENTY OF WATER TO DRINK. GET MEDICAL ATTENTION AT ONCE.

SECTION IV - SPECIAL PRECAUTIONS FOR STORAGE AND HANDLING

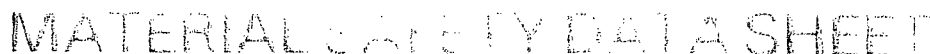
ACTIVE CLOTHING: WEAR RUBBER GLOVES, A RUBBER RAINCOAT, AND RUBBER BOOTS.
 PROTECTION: WHEN USING THIS PRODUCT OR WHEN WORKING IN A FUMY AREA, USE LIGHT-PROOFING SAFETY GOGGLES. SAFETY GOGGLES (CONTACT LENSES SHOULD NOT BE WORN WHEN HANDLING THIS MATERIAL).
 RESPIRATORY PROTECTION: WEAR A PROPERLY FITTING MSA OR USHA-APPROVED RESPIRATOR WHEN USING THIS PRODUCT OR WHEN WORKING IN A FUMY AREA.
 VENTILATION: IF VAPORS ARE DETECTED, VENTILATE WORK AREA BY OPENING WINDOWS AND USING EXHAUST FANS.

SECTION V - PHYSICAL DATA

BOILING POINT (°C):	212 APPROX	SPECIFIC GRAVITY:	1.20
MELTING POINT (°C):	N/A	PERCENT VOLATILE BY VOLUME (%):	98.2
DENSITY (G/CM ³):	N/A	EVAPORATION RATE (WATER):	1.0
SOLUBLE IN WATER:	COMPLETE	RELATIVE VAPOR PRESSURE:	1.0
		PROPOSED DILUTION OF 1% SOLUTION OF:	1.5
APPEARANCE AND ODOR:	A BROWN LIQUID WITH STRONG IRRITATING FUMES		

SECTION VI - FIRE AND EXPLOSION DATA

FLAMMABLE (LFL/ULFL) USED: NONE
 FLAMMABLE (LFL/ULFL) USED: NONE
 FLAMMABLE MEDIA: NON-COMBUSTIBLE
 FIRE FIGHTING: SELF-CONTAINED BREATHING APPARATUS, RUBBER SUIT
 OTHER HAZARDS: CHLORINE GAS WILL BE RELEASED WHEN HEATED

[illegible]

VIII - 67 - 1 - 11 V I I Y D A !

color	:	SLIGHTLY	
solubility	:	strongly alkaline and	soluble in water in
acidification	:	will not decolor	
group in classification	:	HYDROCHLORIC ACID	strongly acid

THE VILLAGE OF L L AND D I L P O I N T P R O D U C E D U R E S

IF IN TOUCH WITH CASE MATERIAL IS RELEASED OR SPILLED
IMMEDIATELY GRAB INERT ADSORBENT MATERIAL (e.g. ZIR-DORBITE), PICK UP and
DISPOSE IN A TRASH CAN. DO NOT SPECIFICALLY DISPOSE OF THIS AS A
HAZARDOUS WASTE. THOROUGHLY CLEAN AREA WITH A DETERGENT SOLUTION. RINSE AREA
WITH FRESH CLEAN WATER.

1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036 2037 2038 2039 2040 2041 2042 2043 2044 2045 2046 2047 2048 2049 2050 2051 2052 2053 2054 2055 2056 2057 2058 2059 2060 2061 2062 2063 2064 2065 2066 2067 2068 2069 2070 2071 2072 2073 2074 2075 2076 2077 2078 2079 2080 2081 2082 2083 2084 2085 2086 2087 2088 2089 2090 2091 2092 2093 2094 2095 2096 2097 2098 2099 2100 2101 2102 2103 2104 2105 2106 2107 2108 2109 2110 2111 2112 2113 2114 2115 2116 2117 2118 2119 2120 2121 2122 2123 2124 2125 2126 2127 2128 2129 2130 2131 2132 2133 2134 2135 2136 2137 2138 2139 2140 2141 2142 2143 2144 2145 2146 2147 2148 2149 2150 2151 2152 2153 2154 2155 2156 2157 2158 2159 2160 2161 2162 2163 2164 2165 2166 2167 2168 2169 2170 2171 2172 2173 2174 2175 2176 2177 2178 2179 2180 2181 2182 2183 2184 2185 2186 2187 2188 2189 2190 2191 2192 2193 2194 2195 2196 2197 2198 2199 2200 2201 2202 2203 2204 2205 2206 2207 2208 2209 2210 2211 2212 2213 2214 2215 2216 2217 2218 2219 2220 2221 2222 2223 2224 2225 2226 2227 2228 2229 2230 2231 2232 2233 2234 2235 2236 2237 2238 2239 2240 2241 2242 2243 2244 2245 2246 2247 2248 2249 2250 2251 2252 2253 2254 2255 2256 2257 2258 2259 2260 2261 2262 2263 2264 2265 2266 2267 2268 2269 2270 2271 2272 2273 2274 2275 2276 2277 2278 2279 2280 2281 2282 2283 2284 2285 2286 2287 2288 2289 2290 2291 2292 2293 2294 2295 2296 2297 2298 2299 2300 2301 2302 2303 2304 2305 2306 2307 2308 2309 2310 2311 2312 2313 2314 2315 2316 2317 2318 2319 2320 2321 2322 2323 2324 2325 2326 2327 2328 2329 2330 2331 2332 2333 2334 2335 2336 2337 2338 2339 2340 2341 2342 2343 2344 2345 2346 2347 2348 2349 2350 2351 2352 2353 2354 2355 2356 2357 2358 2359 2360 2361 2362 2363 2364 2365 2366 2367 2368 2369 2370 2371 2372 2373 2374 2375 2376 2377 2378 2379 2380 2381 2382 2383 2384 2385 2386 2387 2388 2389 2390 2391 2392 2393 2394 2395 2396 2397 2398 2399 2400 2401 2402 2403 2404 2405 2406 2407 2408 2409 2410 2411 2412 2413 2414 2415 2416 2417 2418 2419 2420 2421 2422 2423 2424 2425 2426 2427 2428 2429 2430 2431 2432 2433 2434 2435 2436 2437 2438 2439 2440 2441 2442 2443 2444 2445 2446 2447 2448 2449 2450 2451 2452 2453 2454 2455 2456 2457 2458 2459 2460 2461 2462 2463 2464 2465 2466 2467 2468 2469 2470 2471 2472 2473 2474 2475 2476 2477 2478 2479 2480 2481 2482 2483 2484 2485 2486 2487 2488 2489 2490 2491 2492 2493 2494 2495 2496 2497 2498 2499 2500 2501 2502 2503 2504 2505 2506 2507 2508 2509 2510 2511 2512 2513 2514 2515 2516 2517 2518 2519 2520 2521 2522 2523 2524 2525 2526 2527 2528 2529 2530 2531 2532 2533 2534 2535 2536 2537 2538 2539 2540 2541 2542 2543 2544 2545 2546 2547 2548 2549 2550 2551 2552 2553 2554 2555 2556 2557 2558 2559 2560 2561 2562 2563 2564 2565 2566 2567 2568 2569 2570 2571 2572 2573 2574 2575 2576 2577 2578 2579 2580 2581 2582 2583 2584 2585 2586 2587 2588 2589 2590 2591 2592 2593 2594 2595 2596 2597 2598 2599 2600 2601 2602 2603 2604 2605 2606 2607 2608 2609 2610 2611 2612 2613 2614 2615 2616 2617 2618 2619 2620 2621 2622 2623 2624 2625 2626 2627 2628 2629 2630 2631 2632 2633 2634 2635 2636 2637 2638 2639 2640 2641 2642 2643 2644 2645 2646 2647 2648 2649 2650 2651 2652 2653 2654 2655 2656 2657 2658 2659 2660 2661 2662 2663 2664 2665 2666 2667 2668 2669 2670 2671 2672 2673 2674 2675 2676 2677 2678 2679 2680 2681 2682 2683 2684 2685 2686 2687 2688 2689 2690 2691 2692 2693 2694 2695 2696 2697 2698 2699 2700 2701 2702 2703 2704 2705 2706 2707 2708 2709 2710 2711 2712 2713 2714 2715 2716 2717 2718 2719 2720 2721 2722 2723 2724 2725 2726 2727 2728 2729 2730 2731 2732 2733 2734 2735 2736 2737 2738 2739 2740 2741 2742 2743 2744 2745 2746 2747 2748 2749 2750 2751 2752 2753 2754 2755 2756 2757 2758 2759 2760 2761 2762 2763 2764 2765 2766 2767 2768 2769 2770 2771 2772 2773 2774 2775 2776 2777 2778 2779 2780 2781 2782 2783 2784 2785 2786 2787 2788 2789 2790 2791 2792 2793 2794 2795 2796 2797 2798 2799 2800 2801 2802 2803 2804 2805 2806 2807 2808

SPENT PRODUCT MAY HAVE TO BE ABSORBED ON AN INERT MATERIAL (SPELFORD) AND
NOT BE A HAZARDOUS WASTE. IN MOST STATES, QUANTITIES TOTALING LESS
THAN ONE LB. OF HAZARDOUS MATERIALS PER MONTH CAN BE DISPOSED OF IN A CHEM-
ICAL WASTE WITHOUT BEING DECLARED A HAZARDOUS WASTE. SINCE REGULATIONS VARY
AMONG THE DISPOSAL OF THESE CHEMICALS, LOCAL, STATE, AND FEDERAL
AGENCIES PROPER DISPOSAL METHOD IN YOUR AREA. IF COMPANY EFFLUENT IS
NOT TREATED BY A PUBLICLY OWNED WASTE TREATMENT PLANT, SPENT PRODUCT
MAY BE ABSORBED AND DISCHARGED TO THE SEWER.

WASTE NUMBER(S) : DUC1

CONFIDENTIAL - SPECIAL PRECATEGORIZED

CAUTIONS TO BE TAKEN WHEN HANDLING AND STORING:
 1. CONTAINER TIGHTLY CLOSED WHEN NOT IN USE. STORE OUT OF THE SUN AND AWAY
 FROM HEAT. ALSO KEEP PRODUCT FROM FREEZING.
 2. AWAY FROM HIGHLY ALKALINE PRODUCTS AND OXIDIZING COMPOUNDS.
 3. FROM BREATHABLE SPRAY MISTS OR VAPORS.
 4. AWAY FROM FOOD AND FOOD PRODUCTS.
 5. THE DR. SHIES WHICH BECOME CONTAMINATED WITH SUBSTANCE SHOULD BE REMOVED
 FROM AND NOT REWORN UNTIL THOROUGHLY CLEANED.
 6. OUT OF THE REACH OF CHILDREN.

CONFIDENTIAL REPORT ATTACHED DATA

COPIES OF THIS NAME

HAZARD CLASS. DOT LABEL/PLACARD.
 P. H. NUMBER
 FOR CHEMICAL INVENTORY - ALL INGREDIENTS ARE LISTED/

JET 28511-
ALLISON

NO
LONGER IN
USE
12-94

M A T E R I A L S A F E T Y D A T A S H E E T

COMPLIES WITH WAC 296-62-05413

COMMON NAME: AC-20-LF

PAGE: 1

SECTION I PREPARATION/REVISION DATE: 09/28/1987

Manufacturer's Name and address: WESMAR COMPANY, INC.
1451 North West 46th
Seattle, WA 98107

Emergency Phone: (206) 783-5344

If no answer call: (206) 523-4243 or (206) 789-5327

Chemical Name: N/A

COMMON NAME: AC-20-LF

Chemical Family: ALKALINE CLEANER Formula: N/A

SECTION II HAZARDOUS INGREDIENTS

-Applicable Exposure Limits-

Chemical and Common Name:	%	Pel-Wish/Osha	TLV-Acghi	Other
SODIUM METASILICATE	40-60	NOT EST.	NOT EST.	N/A
SODIUM TRIPOLYPHOSPHATE	20-40	NOT EST.	NOT EST.	N/A
TRISODIUM PHOSPHATE	20-40	NOT EST.	NOT EST.	N/A
SODIUM CARBONATE	10-20	NOT EST.	NOT EST.	N/A

Also contains: Biodegradable anionic and nonionic surfactants.

* NFPA Designation 704 *
* * * * *
* Flammability *
* (Red) *
* Degree of Hazard *
* * * * *
* 4=Extreme *
* 3=High *
* 2=Moderate *
* 1=Slight *
* 0=Insignificant *
* * * * *
* * * * *
* Special *
* Hazard *
* * * * *

CARCINOGENIC INGREDIENTS

-Reference Source-

Chemical and Common Name:	%	Ntp	Iarc	Wisha/Osha
None listed by I.A.R.C., N.T.P., or O.S.H.A.				

MATERIAL SAFETY DATA SHEET

COMPLIES WITH WAC 296-62-05413

COMMON NAME: AC-20-LF

PAGE: 2

SECTION III HEALTH HAZARD DATA

ACUTE HEALTH EFFECTS:

Product is strongly alkaline; contact with skin or eyes may result in chemical burns. Irreversible eye damage may occur. Inhalation of dusts or mists may irritate upper respiratory tract. Harmful if ingested.

CHRONIC HEALTH EFFECTS:

None known.

ROUTES OF ENTRY:

Eye, skin contact, ingestion, inhalation.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

None known.

EMERGENCY AND FIRST AID PROCEDURES:

(EYE CONTACT):

Immediately begin flushing with cool water and continue for at least 15 minutes. Hold eyelids open while flushing. Seek immediate medical attention.

(SKIN CONTACT):

Immediately remove all contaminated clothing. Flush all affected areas with water for at least 15 minutes. Seek medical attention if irritation occurs. Launder clothing before reuse.

(INGESTION):

Give plenty of water and get victim to a physician at once. Do not induce vomiting. Never give anything by mouth to an unconscious person.

(INHALATION):

Remove to fresh air and seek medical attention.

SECTION IV CHEMICAL DATA

Boiling Point (F):N/A	Specific Gravity (H2O=1):N/A
Vapor Pressure (mm Hg.):N/A	Percent volatile by vol.(%):N/A
Vapor Density (Air=1):N/A	Evaporation rate(____=1):N/A

SOLUBILITY:

Highly soluble in water.

APPEARANCE:

Free flowing blue powder with mild odor.

M A T E R I A L S A F E T Y D A T A S H E E T

COMPLIES WITH WAC 296-62-05413

COMMON NAME: AC-20-LF

PAGE: 3

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SECTION V PHYSICAL HAZARD DATA

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FLASH POINT:
None.

FLAMMABLE LIMITS: Not applicable. Lel: N/A Uel: N/A

EXTINGUISHING MEDIA:
Use media appropriate to primary cause of fire.

SPECIAL FIRE FIGHTING PROCEDURES:
Avoid contact with fire fighting personnel as burns may result from contact with skin. Wear protective clothing and self-contained breathing apparatus.

UNUSUAL FIRE AND EXPLOSION HAZARDS:
None.

INCOMPATIBILITY (Materials to avoid):
Acids, oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS:
None under normal use, Carbon monoxide under fire conditions.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: N/A

STABILITY: Stable.

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SECTION VI SPILL OR LEAK PROCEDURES

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STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:
Wearing proper protective clothing, scoop up and salvage as much as possible. Flush remaining amount to holding area and hold for disposal.

WASTE DISPOSAL METHOD:
Dispose of in approved chemical disposal area or in a manner which complies with all local, state and federal regulations. Do not flush to sewer without permission from local authorities.

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M A T E R I A L S A F E T Y D A T A S H E E T

COMPLIES WITH WAC 296-62-05413

COMMON NAME: AC-20-LF

PAGE: 4

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SECTION VII EXPOSURE CONTROL INFORMATION

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RESPIRATORY PROTECTION:

None required unless TLV is exceeded.

VENTILATION:

Mechanical / general.

PROTECTIVE GLOVES:

Rubber.

EYE PROTECTION:

Chemical safety goggles and face shield.

OTHER PROTECTIVE EQUIPMENT:

Overalls, rubber boots.

OTHER ENGINEERING CONTROLS:

None.

WORK PRACTICES:

Safety eye wash/shower stations must be available in work area.

HYGIENIC PRACTICES:

All Food should be kept in a separate location away from the storage/use location. Hands and face should be thoroughly washed after using and before eating or drinking.

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SECTION VIII SPECIAL PRECAUTIONS

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PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:

Store in a cool, dry location away from food and feed stuffs. Handle with care and caution.

MAINTENANCE PERSONNEL:

Avoid all contact. Make sure all containers are empty of residue before handling or entering without protective clothing.

OTHER PRECAUTIONS: KEEP OUT OF REACH OF CHILDREN.

Do not permit employees to handle this product without proper training and proper protective equipment. Drains must have retention basins for neutralization or other treatment before discharge.

=====

(092887-R;AC20LF;12)



CLEAN ACROSS AMERICA AND
THROUGHOUT THE WORLD™

ZEP MANUFACTURING COMPANY
P.O. BOX 2015
ATLANTA, GEORGIA 30301

OUT OF
SERVICE
12-94

MATERIAL SAFETY DATA SHEET

AND SAFE HANDLING AND DISPOSAL INFORMATION

ISSUE DATE: 08/26/91
SUPERSEDES: 03/09/89
ZEP FORMULA 6556
PRODUCT NUMBER: 1093

SECTION I - EMERGENCY CONTACTS

TELEPHONE:
(404) 352-1680 BETWEEN 8:00 AM - 5:00 PM (EST)

MEDICAL EMERGENCY:
(404) 435-2973 NON-OFFICE HOURS, WEEKENDS
(404) 351-2952 AND HOLIDAYS. PLEASE CALL YOUR
(404) 432-2873 LOCAL POISON CONTROL

TRANSPORTATION EMERGENCY:
(404) 922-0923

CHEMTREC:
1-800-424-9300 TOLL-FREE - ALL CALLS RECORDED

DISTRICT OF COLUMBIA:
(202) 483-7616 ALL CALLS RECORDED

SECTION II - HAZARDOUS INGREDIENTS

DESIGNATIONS

@ = HYDROCHLORIC ACID = muriatic acid; hydrogen chloride; hydrochloride; CAS# 7647-01-0; RTECS# MW4025000;
OSHA/ACGIH CEILING LIMIT-5 PPM
= COPPER SULFATE = CAS# 7758-98-7; RTECS# GL8800000; OSHA PEL-N/D

TLV (PPM)	EFFECTS (SEE REVERSE) TOX COR	% II PRO
5		25-3
N/D	TOX COR	< 1

@ Identifies chemicals listed under SARA-Section 313 for release reporting

SECTION III - HEALTH HAZARD DATA

Special Note: MSDS data pertains to the product as dispensed from the container. Adverse health effects would not be expected under recommended conditions of use (diluted) so long as prescribed safety precautions are practiced.

Acute Effects of Overexposure:

CORROSIVE TO SKIN AND EYES ON CONTACT. EYE CONTACT CAN PRODUCE CORNEAL DAMAGE OR BLINDNESS. SKIN CONTACT CAN PRODUCE INFLAMMATION, REDDENING, AND BLISTERING. INHALATION OF SPRAY MIST OR VAPORS MAY PRODUCE IRRITATION, BURNING, OR DESTRUCTION OF TISSUE IN THE RESPIRATORY TRACT, CHARACTERIZED BY COUGHING CHOKING, PAIN, OR SHORTNESS OF BREATH. SEVERE OVEREXPOSURE MAY LEAD TO FATAL LUNG DAMAGE. INGESTION CAN CAUSE ABDOMINAL PAIN, NAUSEA, VOMITING, AND COLLAPSE, ALONG WITH TISSUE DESTRUCTION IN THE GASTROINTESTINAL TRACT.

Chronic Effects of Overexposure:

REPEATED OR PROLONGED CONTACT WITH ACID VAPORS MAY CAUSE NASAL ULCERATION, BRONCHIAL IRRITATION AND FREQUENT ATTACKS OF BRONCHIAL INFECTION. IN EXTREME CASES, TEETH EROSION COULD RESULT. REPEATED OR PROLONGED EXPOSURE TO VAPORS MAY CAUSE CHRONIC EYE IRRITATION OR FREQUENT EYE INFECTIONS. INGREDIENTS IN THIS PRODUCT MAY AGGRAVATE EXISTING SKIN, EYE, OR RESPIRATORY DISORDERS. NONE OF THE HAZARDOUS INGREDIENTS ARE LISTED AS CARCINOGENS BY IARC, NTP, & OSHA.

Est'd PEL/TLV: 5 PPM

Primary Routes of Entry: N/A

HMIS Codes: HEALTH 3; FLAM. 0; REACT. 1; PERS. PROTECT. X; CHRONIC HAZ. YES

FIRST AID PROCEDURES:

Skin: IMMEDIATELY FLUSH CONTAMINATED SKIN WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. GET MEDICAL ATTENTION IMMEDIATELY.

Eyes: IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES, OCCASIONALLY LIFTING UPPER AND LOWER LIDS. GET MEDICAL ATTENTION AT ONCE.

Inhale: MOVE EXPOSED PERSON TO FRESH AIR AT ONCE. IF BREATHING HAS STOPPED, PERFORM ARTIFICIAL RESPIRATION. GET MEDICAL ATTENTION IMMEDIATELY.

Ingest: IF THIS PRODUCT IS SWALLOWED, DO NOT INDUCE VOMITING. IF VICTIM IS CONSCIOUS GIVE PLENTY OF WATER TO DRINK. GET MEDICAL ATTENTION AT ONCE.

SECTION IV - SPECIAL PROTECTION INFORMATION

Protective Clothing: WEAR RUBBER GLOVES, A RUBBER RAINSUIT, AND RUBBER BOOTS WHEN USING THIS PRODUCT OR WHEN WORKING IN A US AREA.

Eye Protection: USE TIGHT-FITTING, SPLASH-PROOF SAFETY GOGGLES. CONTACT LENSES SHOULD NOT BE WORN WHEN HANDLING THIS MATERIAL.

Respiratory Protection: WEAR A PROPERLY FITTING MSHA OR OSHA-APPROVED RESPIRATOR WHEN USING THIS PRODUCT OR WHEN WORKING IN A US AREA.

Ventilation: IF VAPORS ARE DETECTED, VENTILATE WORK AREA BY OPENING WINDOWS AND USING EXHAUST FANS.

SECTION V - PHYSICAL DATA

Boiling Point (*F):	212F APPROX.	Specific Gravity:	1.116	Vapor Pressure (mmHg):	N/A
Percent Volatile by Volume (%):	98.7	Vapor Density (air = 1):	N/A	Evaporation Rate (WATER = 1):	1.0
Solubility in Water:	COMPLETE	pH (concentrate):	1.0	pH (use dilution of 1% SOLUTION):	1% SOLUTION
Appearance and Odor: A BROWN LIQUID WITH STRONG, IRRITATING FUMES					

SECTION VI - FIRE AND EXPLOSION DATA

Flash Point (*F) (method used): NONE (TCC)

Flammable Limits: LEL N/A UEL N/A

Extinguishing Media: NON-COMBUSTIBLE

Special Fire Fighting: WEAR SELF-CONTAINED POSITIVE PRES. BREATHING APPARATUS.

Unusual Fire Hazards: CHLORINE GAS WILL BE RELEASED WHEN HEATED

SECTION VII - REACTIVITY DATA

Stability: STABLE
Incompatibility (avoid): STRONG ALKALIES AND CHLORINE PRODUCTS
Polymerization: WILL NOT OCCUR
Hazardous Decomposition: HYDROCHLORIC ACID, CHLORINE GAS

SECTION VIII - SPILL AND DISPOSAL PROCEDURES

Steps to be Taken in Case Material is Released or Spilled:
CONSERVE SAFETY PRECAUTIONS IN SECTIONS 4 & 9 DURING CLEAN-UP. ABSORB SPILL ON AN INERT ABSORBENT MATERIAL (eg ZEP-O-ZORB); PICK UP AND PLACE IN A CLEAN D.O.T. SPECIFICATION CONTAINER FOR DISPOSAL. WASH AREA THOROUGHLY WITH A DETERGENT SOLUTION AND THEN RINSE WELL WITH WATER.
Waste Disposal Method:
LIQUIDS CANNOT BE SENT TO LANDFILLS UNLESS SOLIDIFIED. UNUSABLE PRODUCT AND SOME COLLECTED, SPENT USE-DILUTIONS MAY REQUIRE DISPOSAL AS A HAZARDOUS WASTE AT A PERMITTED TREATMENT/STORAGE/DISPOSAL FACILITY. IN MOST STATES HAZARDOUS WASTES IN TOTAL AMOUNTS OF 220 LBS. OR LESS PER MONTH MAY BE DISPOSED OF IN A CHEMICAL OR INDUSTRIAL WASTE LANDFILL. IF COMPANY EFFLUENT IS ULTIMATELY TREATED BY A PUBLICLY OWNED TREATMENT WORKS, NEUTRALIZATION OF SPENT TANK-SOLUTIONS WITH SUBSEQUENT DISCHARGE TO THE SEWER MAY BE POSSIBLE. CONSULT LOCAL, STATE AND FEDERAL AGENCIES FOR PROPER DISPOSAL METHOD IN YOUR AREA.
RCRA Hazardous Waste Numbers: D002 (SEE ABOVE)

SECTION IX - SPECIAL PRECAUTIONS

Precautions to be Taken When Handling and Storing:
STORE TIGHTLY CLOSED CONTAINER IN A DRY AREA AT TEMPS. BETWEEN 40-120 DEGREES F. STORE AWAY FROM HIGHLY ALKALINE PRODUCTS AND OXIDIZING COMPOUNDS. DO NOT BREATHE SPRAY MISTS OR VAPORS. KEEP AWAY FROM FOOD AND FOOD PRODUCTS. CLOTHING OR SHOES WHICH BECOME CONTAMINATED WITH SUBSTANCE SHOULD BE REMOVED PROMPTLY AND NOT REWORN UNTIL THOROUGHLY CLEANED. KEEP OUT OF THE REACH OF CHILDREN.

SECTION X - TRANSPORTATION DATA

DOT Proper Shipping Name: COMPOUND, CLEANING, LIQUID (CONTAINING HYDROCHLORIC (MURIATIC) ACID)
DOT Hazard Class: CORROSIVE MATERIAL
DOT I.D. Number: NA1789
DOT Label/Placard: CORROSIVE
EPA TSCA Chemical Inventory: ALL INGREDIENTS ARE LISTED
EPA CWA 40CFR Part 117 substance (RQ in a single container): HYDROCHLORIC ACID - 5000 #; COPPER SULFATE - 10 #

NOTICE

Thank you for your interest in, and use of, Zep products. Zep Manufacturing Co. is pleased to be of service to you by supplying this Material Safety Data Sheet for your files. Zep Manufacturing is concerned for your health and safety. Zep products can be used safely with proper protective equipment and proper handling practices consistent with label instructions and the MSDS. Before using any Zep product, be sure to read the complete label and the Material Safety Data Sheet.

As a further word of caution, Zep wishes to advise that serious accidents have resulted from the misuse of "empty" containers. "Empty" containers retain residue (liquid or vapor) and can be dangerous. DO NOT pressure wash, weld, braze, solder, drill, grind or expose such containers to heat, flame, or other sources of ignition; they may explode or develop harmful vapors and possibly cause injury or death. Clean empty containers by triple rinsing with water or an appropriate solvent. Empty containers must be sent to a drum reconditioner before reuse.

TERMS AND ABBREVIATIONS USED IN THE MSDS:
BY SECTION ALPHABETICALLY:

SECTION II: HAZARDOUS INGREDIENTS

CAR: Carcinogen - A chemical listed by the National Toxicology Program (NTP), the International Agency for Research on Cancer (IARC) or OSHA as a definite or possible human cancer causing agent.

CAS #: Chemical Abstract Services Registry Number - A universally accepted numbering system for chemical substances.

CBL: Combustible - At temperatures between 100°F and 200°F chemical gives off enough vapor to ignite if a source of ignition is present as tested with a closed cup tester.

CNS: Central Nervous System depressant reduces the activity of the brain and spinal cord.

COR: Corrosive - Causes irreversible alterations in living tissue (e.g. burns).

DESIGNATIONS: Chemical and common names of hazardous ingredients.

EIR: Eye Irritant Only - Causes reversible reddening and/or inflammation of eye tissues.

EXPOSURE LIMITS: The time weighted average (TWA) airborne concentration at which most workers can be exposed without any expected adverse effects. Primary sources include ACGIH TLV's, and OSHA PEL's (TWA, STEL and ceiling limits).

ACGIH: American Conference of Governmental Industrial Hygienists.

CEILING: The concentration that should not be exceeded in the workplace during any part of the working exposure.

OSHA: Occupational Safety and Health Administration

PEL: Permissible Exposure Limit - A set of time weighted average exposure values, established by OSHA, for a normal 8-hour day and a 40-hour work week.

PPM: Parts per million - unit of measure for exposure limits.

(S) SKIN: Skin contact with substance can contribute to overall exposure.

STEL: Short Term Exposure Limit - Maximum concentration

for a continuous 15-minute exposure period.

TLV: Threshold Limit Value - A set of time weighted average exposure limits, established by the ACGIH, for a normal 8-hour day and a 40-hour work week.

FBI: Flammable - At temperatures under 100°F, chemical gives off enough vapor to ignite if a source of ignition is present as tested with a closed cup tester.

HAZARDOUS INGREDIENTS: Chemical substances determined to be potential health or physical hazards by the criteria established in the OSHA Hazard Communication Standard - 29 CFR 1910.1200

HTX: Highly toxic - the probable lethal dose for 70 kg (150 lb.) man and may be approximated as less than 6 teaspoons (2 tablespoons).

IAR: Irritant - Causes reversible effects in living tissues (e.g. inflammation) - primarily skin and eyes.

NA: Not Applicable - Category is not appropriate for this product.

NID: Not Determined - Insufficient information for a determination for this item.

RTECS #: Registry of Toxic Effects of Chemical Substances - an unreviewed listing of published toxicology data on chemical substances.

SARA: Superfund Amendments and Reauthorization Act - Section 313 designates chemicals for possible reporting for the Toxics Release Inventory.

SEN: Sensitizer - Causes allergic reaction after repeated exposure.

TOX: Toxic - The probable lethal dose for a 70 kg (150 lb.) man is one ounce (2 tablespoons) or more.

SECTION III: HEALTH HAZARD DATA

ACUTE EFFECT: An adverse effect on the human body from a single exposure with symptoms developing almost immediately after exposure or within a relatively short time.

CHRONIC EFFECT: Adverse effects that are most likely to occur from repeated exposure over a long period of time.

ESTD PEL/TLV: This estimated, time-weighted average, exposure limit, developed by using a formula provided by the ACGIH, pertains to airborne concentrations from the product as a whole. This value should serve as guide for providing safe workplace conditions to nearly all workers.

HMS CODES: Hazardous Material Identification System - a rating system developed by the National Paint and Coating Association for estimating the hazard potential of a chemical under normal workplace conditions. These risk estimates are indicated by a numerical rating given in each of three hazard areas (Health/Flammability/Reactivity) ranging from a low of zero to a high of 4. A chronic hazard is indicated with a yes. Consult HMS training guides for Personal Protection letter codes which indicate necessary protective equipment.

PRIMARY ROUTE OF ENTRY: The way one or more hazardous ingredients may enter the body and cause a generalized-systemic or specific-organ toxic effect.

ING: Ingestion - A primary route of exposure through swallowing of material.

INH: Inhalation - A primary route of exposure through breathing of vapors.

SKIN: A primary route of exposure through contact with

the skin.

SECTION IV: SPECIAL PROTECTION INFORMATION

Where respiratory protection is recommended, use only MSHA and NIOSH approved respirators and dust masks.

MSHA: Mine Safety and Health Administration

NIOSH: National Institute for Occupational Safety and Health.

SECTION V: PHYSICAL DATA

EVAPORATION RATE: It refers to the rate of change from the liquid state to the vapor state at ambient temperature and pressure in comparison to a given substance (e.g. water).

pH: A value representing the acidity or alkalinity of an aqueous solution (Acidic pH = 1; Neutral pH = 7; Alkaline pH = 14)

PERCENT VOLATILE: The percentage of the product (liquid or solid) that will evaporate at 212°F and ambient pressure.

SOLUBILITY IN WATER: A description of the ability of the product to dissolve in water.

SECTION VII: REACTIVITY DATA

HAZARDOUS DECOMPOSITION: Breakdown products expected to be produced upon product decomposition or fire.

INCOMPATIBILITY: Material contact and conditions to avoid to prevent hazardous reactions.

POLYMERIZATION: Indicates the tendency of the product's molecules to combine in a chemical reaction releasing excess pressure and heat.

STABILITY: Indicates the susceptibility of the product to spontaneously and dangerously decompose.

SECTION VIII: SPILL AND DISPOSAL PROCEDURES

RCRA WASTE NOS: RCRA (Resource Conservation and Recovery Act) waste codes (40 CFR 261) applicable to the disposal of spilled or unusable product from the original container.

SECTION X: TRANSPORTATION DATA

CWA: Clean Water Act

RQ: Reportable Quantity - The amount of the specific ingredient that, when spilled to the ground and can enter a storm sewer or natural watershed, must be reported to the National Response Center, and other regulatory agencies.

TSCA: Toxic Substances Control Act - a federal law requiring all commercial chemical substances to appear on an inventory maintained by the EPA.

DISCLAIMER

All statements, technical information and recommendations contained herein are based on available scientific tests or data which we believe to be reliable. The accuracy and completeness of such data are not warranted or guaranteed. We cannot anticipate all conditions under which this information and our products, or the products of other manufacturers in combination with our products, may be used. Zep assumes no liability or responsibility for loss or damage resulting from the improper use or handling of our products, from incompatible product combinations, or from the failure to follow instructions, warnings, and advisories in the product's label and Material Safety Data Sheet.

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1	21	7	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100			
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1. 姓名		2. 性别		3. 年龄		4. 民族		5. 籍贯		6. 职业		7. 文化程度		8. 政治面貌		9. 婚姻状况		10. 健康状况		11. 其他	
1	张三	男	25	汉族	湖南长沙	教师	大学	中共党员	已婚	良好											
2	李四	女	30	汉族	湖北武汉	医生	高中	民主党派	未婚	一般											
3	王五	男	45	汉族	广东广州	工程师	硕士	中共党员	已婚	良好											
4	赵六	女	28	汉族	四川成都	会计	中专	群众	已婚	一般											
5	孙七	男	35	汉族	浙江杭州	公务员	本科	中共党员	已婚	良好											
6	周八	女	40	汉族	江苏南京	教授	博士	民主党派	已婚	良好											
7	吴九	男	22	汉族	福建厦门	学生	高中	群众	未婚	一般											
8	郑十	女	38	汉族	山东青岛	护士	大专	群众	已婚	一般											
9	冯十一	男	42	汉族	河南郑州	经理	本科	中共党员	已婚	良好											
10	陈十二	女	27	汉族	广西桂林	文员	中专	群众	已婚	一般											
11	林十三	男	32	汉族	江西九江	司机	高中	群众	已婚	一般											
12	黄十四	女	48	汉族	安徽合肥	退休	小学	群众	已婚	一般											
13	徐十五	男	20	汉族	湖南邵阳	学生	初中	群众	未婚	一般											
14	马十六	女	33	汉族	湖北黄冈	教师	本科	中共党员	已婚	良好											
15	朱十七	男	43	汉族	广东深圳	工程师	硕士	民主党派	已婚	良好											
16	李十八	女	23	汉族	四川绵阳	学生	高中	群众	未婚	一般											
17	王十九	男	37	汉族	浙江宁波	公务员	本科	中共党员	已婚	良好											
18	赵二十	女	47	汉族	江苏苏州	教授	博士	民主党派	已婚	良好											
19	孙二十一	男	24	汉族	福建福州	学生	高中	群众	未婚	一般											
20	周二十二	女	34	汉族	山东烟台	护士	大专	群众	已婚	一般											
21	吴二十三	男	44	汉族	河南开封	经理	本科	中共党员	已婚	良好											
22	郑二十四	女	26	汉族	广西柳州	文员	中专	群众	已婚	一般											
23	冯二十五	男	36	汉族	江西景德镇	司机	高中	群众	已婚	一般											
24	陈二十六	女	46	汉族	安徽芜湖	退休	小学	群众	已婚	一般											
25	林二十七	男	21	汉族	湖南岳阳	学生	初中	群众	未婚	一般											
26	黄二十八	女	31	汉族	湖北孝感	教师	本科	中共党员	已婚	良好											
27	徐二十九	男	41	汉族	广东佛山	工程师	硕士	民主党派	已婚	良好											
28	马三十	女	29	汉族	四川南充	学生	高中	群众	未婚	一般											
29	朱三十一	男	39	汉族	浙江绍兴	公务员	本科	中共党员													

OUT OF SERVICE
12-94

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EXPOSURE TO HIGH AND LONG TERM OF CONTACT. EYE CONTACT CAN PRODUCE SEVERAL DAMAGE OF THE EYE. EYE CONTACT CAN PRODUCE IRRITATION, BURNING, AND BLISTERING. IN-
HALATION OF GAS, VAPOR OR AEROSOL MAY PRODUCE IRRITATION, BURNING, OR DESTRUCTION
OF TISSUE IN THE RESPIRATORY TRACT, CHARACTERIZED BY COUGHING, CHOKING, PAIN, OR
SHORTNESS OF BREATH. SEVERE EXPOSURE MAY LEAD TO FATAL LUNG DAMAGE. INHA-
TION CAN CAUSE HEADACHE, DROWSINESS, VOMITING AND COLIC. ALONG WITH THESE
DESTRUCTION IN THE RESPIRATORY TRACT.



MATERIAL SAFETY DATA SHEET

AND SAFE HANDLING AND DISPOSAL INFORMATION

PAGE 2 OF 2

MANUFACTURING COMPANY
IN MAINTENANCE PRODUCTS

ISSUE DATE 12.10.89 ZEP 147 NEUTRALIZER
SUPERSEDES 1780-17 PRODUCT NUMBER 1-88

SECTION 11 - FIRST AID - CONTINUED

CHRONIC EFFECTS OF EXPOSURE
REPEATED OR PROLONGED CONTACT WITH SKIN MAY CAUSE IRRITATION AND SEVERE SKIN IRRITATION. REPEATED OR PROLONGED EXPOSURE TO SPRAY MIST MAY PRODUCE RESPIRATORY TRACT IRRITATION LEADING TO POSSIBLE ATTACKS OF BRONCHIAL INFECTION.

NONE OF THE INGREDIENTS ARE LISTED AS HAZARDOUS BY THE NTP OF 1980

SECTION 12 - PHYSICAL AND CHEMICAL PROPERTIES OF MATERIAL

HAZARD CODES HEALTH 3 FLAM 3 OXIDIZ 3 REACT 3 CORROS 3 TOXIC 3 YES

FIRST AID PROCEDURES:

SKIN IMMEDIATELY FLUSH CONTAMINATED SKIN WITH PLenty OF WATER FOR AT LEAST 15 MINUTES. GET MEDICAL ATTENTION IMMEDIATELY.
EYES IMMEDIATELY FLUSH EYES WITH PLenty OF WATER FOR AT LEAST 15 MINUTES. CONTINUE FLUSHING UNTIL EYES ARE OPEN. GET MEDICAL ATTENTION AT ONCE.
INHALE IF THIS PRODUCT IS SWALLOWED, DO NOT INDUCE VOMITING. IF VOMITING IS OBSERVED GIVE PLenty OF WATER TO DRINK. GET MEDICAL ATTENTION AT ONCE.

SECTION 13 - PHYSICAL AND CHEMICAL PROPERTIES OF MATERIAL

PROTECTIVE CLOTHING WEAR RUBBER OR NEOPRENE GLOVES AND A FACE SHIELD WHEN USING A RUBBER APRON AND BOOTS ARE STRONGLY RECOMMENDED.
EYE PROTECTION WEAR SPLASH-PROOF SAFETY GOGGLES ESPECIALLY IF CONTACT LENSES ARE WORN.
RESPIRATORY PROTECTION: IF VENTILATION IS INADEQUATE, WEAR A PROPERLY FITTING NIOSH OR OSHA-APPROVED RESPIRATOR.
VENTILATION IF VAPORS ARE DETECTED, VENTILATE WORK AREA BY OPENING WINDOWS AND USING EXHAUST FANS.

SECTION 14 - PHYSICAL AND CHEMICAL DATA

BOILING POINT (°F)	282	SPECIFIC GRAVITY	1.55
VAPOR PRESSURE (mm Hg)	0.4	PERCENT VOLATILE VOLUME (V)	25
VAPOR DENSITY (AIR = 1)	2.0	EVAPORATION RATE	5.0
SOLUBILITY IN WATER	COMPLETE	PH CONCENTRATE	11.0
		PHOSE DILUTION OF 1% SOLUTION	11.0

APPEARANCE AND ODOOR A COLORLESS LIQUID WITH NO ODOOR

SECTION 15 - FIRE AND EXPLOSION DATA

FLASH POINT (°F) (METHOD USED) NONE
FLAMMABLE LIMITS (L) (U) N/A
EXTINGUISHING MEDIA: CO₂, CHEMICAL, CARBON DIOXIDE AND WATER FOR EFFECTIVE FIRE FIGHTING. SELF CONTAINED BREATHING APPARATUS, RUBBER GLOVES, UNUSUAL FIRE WEAPONS, SULFURIC ACID MUST BE AVAILABLE TO EXTINGUISH CONTAINERS.



MATERIAL SAFETY DATA SHEET

AND SAFE HANDLING AND DISPOSAL INFORMATION

PAGE 3 OF 3

MANUFACTURING COMPANY
ST IN MAINTENANCE PRODUCTS

DATE: 12/1/77 ZEP 447 NEUTRALIZER
REVISED: 12/1/77 PRODUCT NUMBER: 1445

SECTION II - HAZARD IDENTIFICATION

STABLE
COMPATIBILITY: STRONG OXIDIZERS, ACIDIC AND ACTIVE METALS
CORROSION: KILL WITH SOAP
ADDITIONAL INFORMATION: HAZARDOUS GAS FROM REACTION WITH STEEL OR ACTIVE METALS
SULFUR DIOXIDE, SULFUR DIOXIDE

SECTION III - FIRST AID MEASURES

HAZARD TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
USING SAFETY PRECAUTIONS IN SECTIONS I & II DURING CLEANUP. ABSORB SPILL IN
AN INERT ABSORBENT MATERIAL (SEE SECTION I). PICK UP AND PLACE IN A CLEAN, TIGHT
CONTAINMENT CONTAINER FOR DISPOSAL. WASH SKIN THOROUGHLY WITH A DETERGENT
SOLUTION AND THEN RINSE WELL WITH WATER

SECTION IV - DISPOSAL METHOD

WASTE CANNOT BE SENT TO LANDFILL UNLESS SOLIDIFIED. UNUSABLE PRODUCT AND
BOTTLE COLLECTED. SPENT DILUTIONS MAY REQUIRE DISPOSAL AS A HAZARDOUS WASTE AT
A PERMITTED TREATMENT/STORAGE/DISPOSAL FACILITY. IN MOST STATES HAZARDOUS WASTE
IN TOTAL AMOUNTS OF 550 LBS. OR LESS PER MONTH MAY BE DISPOSED OF IN A CHEMICAL
OR INDUSTRIAL WASTE LANDFILL. IF COMPANY SPILLER IS NOTIFIED, TREATED AND
REMOVED. TREATMENT WORKS. NEUTRALIZATION OF SPENT DILUTIONS WITH ALKALI
AND DISPOSAL IN THE SEWER IS POSSIBLE. CONSULT LOCAL, STATE AND FEDERAL
AGENCIES FOR PROPER DISPOSAL METHODS IN ALL CASES

SECTION V - WASTE HAZARD (SEE ABOVE)

SECTION VI - PRECAUTIONS

PRECAUTIONS TO BE TAKEN WHEN HANDLING AND STORING:
STORE TIGHTLY CLOSED CONTAINER IN A DRY AREA AT TEMPS. BETWEEN 40-120 DEGREES F.
STORE AWAY FROM HIGHLY ALKALINE PRODUCTS AND OXIDIZING COMPOUNDS.
KEEP PRODUCT AWAY FROM SKIN AND EYES.
DO NOT BREATHE SPRAY MISTS OR VAPORS.
KEEP AWAY FROM FOOD AND FOOD PRODUCTS.
CLOTHING OR SHOES WHICH BECOME CONTAMINATED WITH SUBSTANCE SHOULD BE REMOVED
PROMPTLY AND NOT RETURN UNTIL THOROUGHLY CLEANED.
KEEP OUT OF THE REACH OF CHILDREN

SECTION VII - TRANSPORTATION DATA

DOT PROPOSED SHIPPING NAME

INFLAMMABLE ACID

HAZARD CLASS CORROSIVE MATERIAL

DOT NUMBER 1445 DOT LABEL/PLACARD CORROSIVE

SP. FROM CHEMICAL INVENTORY - ALL INGREDIENTS ARE LISTED

REF. OR ADDER PART 117 SUBSTANCE(S) IN A SINGLE CONTAINER: SULFURIC ACID, 100%



MATERIAL SAFETY DATA SHEET

AND SAFE HANDLING AND DISPOSAL INFORMATION

09/06/90
PAGE 1 OF 3

MANUFACTURING COMPANY
IN MAINTENANCE PRODUCTS

ISSUE DATE: 04/23/90 X-3388
SUPERSEDES: 08/07/88 PRODUCT NUMBER: 4874

SECTION I - EMERGENCY CONTACTS

ZEP MANUFACTURING COMPANY TELEPHONE: (404)352-1680 BETWEEN 8:00 AM-5:00 PM (EST)
P.O. BOX 2015 NON-OFFICE HOURS, WEEKENDS, AND HOLIDAYS: AREA CODE 404
ATLANTA, GEORGIA 30301 435-2973, 996-0899, 351-2952, 971-3367, 482-2873
LOCAL POISON CONTROL CENTER *****
TRANSPORTATION EMERGENCY: CHEMTREC: TOLL FREE 1-800-424-9300 ALL CALLS RECORDED
DISTRICT OF COLUMBIA (202)483-7616 ALL CALLS RECORDED

SECTION II - HAZARDOUS INGREDIENTS

DESIGNATIONS	TLV (PPM)	EFFECTS (SEE REVERSE)	% IN PROD.
** DIPROPYLENE GLYCOL METHYL ETHER ** dipropylene glycol monomethyl ether; CAS# 34590-94-8; RTECS# JB1575000; OSHA PEL-100 PPM; OSHA/ACGIH STEL-150 PPM	100	CHL	10-20
** PROPRIETARY SULFUR-CONTAINING POLYALKYLENE OXIDE ** Trade secret of the Phillips 66 Company Bartlesville, Oklahoma 74004	N/D	EIR	10-20

SPECIAL NOTE: ADVERSE HEALTH EFFECTS WOULD NOT BE EXPECTED UNDER RECOMMENDED CONDITIONS OF USE SO LONG AS PRESCRIBED SAFETY PRECAUTIONS ARE PRACTICED.

SECTION III - HEALTH HAZARD DATA

ACUTE EFFECTS OF OVEREXPOSURE:

THIS PRODUCT MAY IRRITATE EYES AND SKIN UPON CONTACT. INFLAMMATION OF EYE IS CHARACTERIZED BY REDNESS, WATERING, AND ITCHING. SKIN INFLAMMATION IS CHARACTERIZED BY ITCHING, SCALING, REDDENING, OR, OCCASSIONALLY, BLISTERING. OVER-EXPOSURE BY INHALATION MAY CAUSE RESPIRATORY IRRITATION. INGREDIENTS IN THIS PRODUCT MAY AGGRAVATE EXISTING SKIN, EYE, OR RESPIRATORY DISORDERS.



MATERIAL SAFETY DATA SHEET

AND SAFE HANDLING AND DISPOSAL INFORMATION

PAGE 3 OF 3

MANUFACTURING COMPANY
IN MAINTENANCE PRODUCTS

ISSUE DATE: 04/23/90 X-3388
SUPERSEDES: 08/07/88 PRODUCT NUMBER: 4874

SECTION VII - REACTIVITY DATA

STABILITY : STABLE
INCOMPATIBILITY(AVDID) : NONE
POLYMERIZATION : WILL NOT OCCUR
HAZARDOUS DECOMPOSITION: CARBON DIOXIDE, CARBON MONOXIDE, & OXIDES OF SULFUR

NO LONGER
IN USE

SECTION VIII - SPILL AND DISPOSAL PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:
OBSERVE SAFETY PROCEDURES IN SECTION 4 & 9 DURING CLEAN-UP. ABSORB SPILL ON
INERT ABSORBENT MATERIAL (see ZEP-O-ZORB). PICK UP AND PLACE RESIDUE IN A
SUITABLE WASTE CONTAINER OR, IF PERMITTED, FLUSH TO SEWER. THOROUGHLY RINSE
SPILL AREA WITH WATER.

WASTE DISPOSAL METHOD:

LIQUID WASTES ARE NOT PERMITTED IN LANDFILLS. THIS PRODUCT IS NOT CONSIDERED A
HAZARDOUS WASTE UNDER RCRA. UNUSABLE LIQUID MAY BE ABSORBED ON AN INERT ABSORB-
ENT (see ZEP-O-ZORB), DRUMMED, AND TAKEN TO A CHEMICAL OR INDUSTRIAL LANDFILL. IN
SOME AREAS DISPOSAL BY FLUSHING INTO A SANITARY SEWER WITH PLENTY OF WATER MAY
BE PERMISSIBLE. CONSULT LOCAL, STATE, AND FEDERAL AGENCIES FOR PROPER DISPOSAL
METHOD IN YOUR AREA.

RCRA HAZ. WASTE NOS.: N/A

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN WHEN HANDLING AND STORING:
STORE TIGHTLY CLOSED CONTAINER IN A DRY AREA AT TEMPS. BETWEEN 40-120 DEGREES F.
KEEP PRODUCT AWAY FROM SKIN AND EYES.
KEEP PRODUCT OUT OF EYES.
AVOID PROLONGED CONTACT WITH SKIN.
CLOTHING OR SHOES WHICH BECOME CONTAMINATED WITH SUBSTANCE SHOULD BE REMOVED
PROMPTLY AND NOT REWORN UNTIL THOROUGHLY CLEANED.
DO NOT BREATHE SPRAY MISTS OR VAPORS.
KEEP OUT OF THE REACH OF CHILDREN.

SECTION X - TRANSPORTATION DATA

DOT PROPER SHIPPING NAME
NONE

HAZARD CLASS: N/A

I.D. NUMBER: N/A

DOT LABEL/PLACARD: NONE

EX., TSCA CHEMICAL INVENTORY - ALL INGREDIENTS ARE LISTED

EPA CWA 40CFR PART 117 SUBSTANCE(R) IN A SINGLE CONTAINER: N/A



CLEAN ACROSS AMERICA AND
THROUGHOUT THE WORLD™

ZEP MANUFACTURING COMPANY
P.O. BOX 2015
ATLANTA, GEORGIA 30301

MATERIAL SAFETY DATA SHEET

AND SAFE HANDLING AND DISPOSAL INFORMATION

ISSUE DATE: 12/16/91
SUPERSEDES: 11/13/91

ZEP Z GREEN
PRODUCT NUMBER: 1848

SECTION I - EMERGENCY CONTACTS

TELEPHONE:
(404) 352-1680 BETWEEN 8:00 AM - 5:00 PM (EST)

MEDICAL EMERGENCY:
(404) 435-2973 NON-OFFICE HOURS, WEEKENDS
(404) 351-2952 AND HOLIDAYS, PLEASE CALL YOUR
(404) 432-2873 LOCAL POISON CONTROL

TRANSPORTATION EMERGENCY:
(404) 922-0923

CHEMTREC:
1-800-424-9300 TOLL-FREE - ALL CALLS RECORDED
DISTRICT OF COLUMBIA:
(202) 483-7616 ALL CALLS RECORDED

SECTION II - HAZARDOUS INGREDIENTS

DESIGNATIONS

TLV (PPM)	EFFECTS (SEE REVERSE)	% I PRC
N/D	IRR SEN CBL	<

SECTION III - HEALTH HAZARD DATA

Special Note: MSDS data pertains to the product as dispensed from the container. Adverse health effects would not be expected under recommended conditions of use (diluted) so long as prescribed safety precautions are practiced.

Acute Effects of Overexposure:

PRODUCT IS CONSIDERED NON-TOXIC ORALLY ACCORDING TO 16 CFR 1500.3 (CODE OF FEDERAL REGULATIONS 16, FEDERAL HAZARDOUS SUBSTANCE ACT REGULATIONS, PART 1500.3); HOWEVER, NO PRODUCT SHOULD BE INTENTIONALLY INGESTED. INGESTION OF AN EXCESSIVE AMOUNT OF THE PRODUCT MAY CAUSE COMPLICATIONS. THERE ARE NO KNOWN EFFECTS FROM ACUTE OVEREXPOSURE TO THIS PRODUCT. HOWEVER, IN LIGHT OF GOOD INDUSTRIAL HYGIENE, EXPOSURE TO ANY CHEMICAL SHOULD BE KEPT TO A MINIMUM.

Chronic Effects of Overexposure:

THERE ARE NO KNOWN EFFECTS FROM CHRONIC EXPOSURE TO THIS PRODUCT. NONE OF THE INGREDIENTS ARE LISTED AS CARCINOGENS BY IARC, NIOSH OR OSHA.

Est'd PEL/TLV: NOT ESTABLISHED

Primary Routes of Entry: N/A

HMIS Codes: HEALTH 1; FLAM. 0; REACT. 0; PERS. PROTECT. B; CHRONIC HAZ. NO

FIRST AID PROCEDURES:

Skin: FLUSH CONTAMINATED SKIN WITH PLENTY OF WATER. CONSULT A PHYSICIAN IF IRRITATION DEVELOPS.
Eyes: IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. IF IRRITATION DEVELOPS, CONSULT A PHYSICIAN.
Inhale: MOVE EXPOSED PERSON TO FRESH AIR. IF IRRITATION PERSISTS, GET MEDICAL ATTENTION PROMPTLY.
Ingest: IF THIS PRODUCT IS SWALLOWED, DO NOT INDUCE VOMITING. IF VICTIM IS CONSCIOUS GIVE PLENTY OF WATER TO DRINK. GET MEDICAL ATTENTION AT ONCE.

SECTION IV - SPECIAL PROTECTION INFORMATION

Protective Clothing: WEARING NEOPRENE OR NITRILE GLOVES IS RECOMMENDED WHEN PROLONGED EXCESSIVE CONTACT OCCURS (eg IMMERSION HANDS)

Eye Protection: USE OF TIGHT-FITTING SAFETY GLASSES OR GOGGLES IS STRONGLY RECOMMENDED, ESPECIALLY WHEN WEARING CONTACT LENSES.

Respiratory Protection: NO SPECIAL MEASURES ARE REQUIRED.

Ventilation: NO SPECIAL MEASURES ARE REQUIRED.

SECTION V - PHYSICAL DATA

Boiling Point (°F):	212 F	Specific Gravity:	1.001	Vapor Pressure (mmHg):	N/D
Percent Volatile by Volume (%):	95.4	Vapor Density (air = 1):	N/D	Evaporation Rate (WATER = 1):	1.0
Solubility in Water:	COMPLETE	pH (concentrate):	9.0-9.5	pH (use dilution of N/D):	N/D
Appearance and Odor: A CLEAR, GREEN LIQUID WITH A SASSAFRAS FRAGRANCE					

SECTION VI - FIRE AND EXPLOSION DATA

Flash Point (°F) (method used): N/A ()

Flammable Limits: LEL N/A UEL N/A

Extinguishing Media: NON-COMBUSTIBLE.

Special Fire Fighting: WEAR SELF-CONTAINED POSITIVE PRES. BREATHING APPARATUS.

Unusual Fire Hazards: NONE

NO LONGER IN USE

SECTION VII - REACTIVITY DATA

Stability: STABLE
Incompatibility (avoid): STRONG OXIDIZING AGENTS
Polymerization: WILL NOT OCCUR.
Hazardous Decomposition: CARBON DIOXIDE, CARBON MONOXIDE, AND OTHER UNIDENTIFIED ORGANIC COMPOUNDS.

SECTION VIII - SPILL AND DISPOSAL PROCEDURES

to be Taken in Case Material is Released or Spilled:

RESERVE SAFETY PROCEDURES IN SECTION 4 & 9 DURING CLEAN-UP. ABSORB SPILL ON INERT ABSORBENT MATERIAL (eg ZEP-O-ZORB). PICK UP AND PLACE RESIDUE IN A SUITABLE WASTE CONTAINER OR, IF PERMITTED, FLUSH TO SEWER. THOROUGHLY RINSE SPILL AREA WITH WATER.

Waste Disposal Method:

LIQUID WASTES ARE NOT PERMITTED IN LANDFILLS. THIS PRODUCT IS NOT CONSIDERED A HAZARDOUS WASTE UNDER RCRA. UNUSABLE LIQUID MAY BE ABSORBED ON AN INERT ABSORBENT MATERIAL (eg ZEP-O-ZORB), DRUMMED, AND TAKEN TO A CHEMICAL OR INDUSTRIAL LANDFILL. IN SOME AREAS DISPOSAL BY FLUSHING INTO A SANITARY SEWER WITH PLENTY OF WATER MAY BE PERMISSIBLE. CONSULT LOCAL, STATE, AND FEDERAL AGENCIES FOR PROPER DISPOSAL METHOD IN YOUR AREA.

RCRA Hazardous Waste Numbers: N/A

SECTION IX - SPECIAL PRECAUTIONS

Precautions to be Taken When Handling and Storing:

STORE TIGHTLY CLOSED CONTAINER IN A DRY AREA AT TEMPS. BETWEEN 40-120 DEGREES F. KEEP PRODUCT OUT OF EYES. AVOID PROLONGED CONTACT WITH SKIN. CLOTHING OR SHOES WHICH BECOME CONTAMINATED WITH SUBSTANCE SHOULD BE REMOVED PROMPTLY AND NOT REWORN UNTIL THOROUGHLY CLEANED. KEEP OUT OF THE REACH OF CHILDREN.

SECTION X - TRANSPORTATION DATA

DOT Proper Shipping Name: NONE

DOT Hazard Class: N/A

DOT I.D. Number: N/A

EPA TSCA Chemical Inventory: ALL INGREDIENTS ARE LISTED

EPA CWA 40CFR Part 117 substance (RQ in a single container): SODIUM DODECYL BENZENE SULFONATE - 1000#

DOT Label/Placard: NONE

NOTICE

Thank you for your interest in, and use of, Zep products. Zep Manufacturing Co. is pleased to be of service to you by supplying this Material Safety Data Sheet for your files. Zep Manufacturing is concerned for your health and safety. Zep products can be used safely with proper protective equipment and proper handling practices consistent with label instructions and the MSDS. Before using any Zep product, be sure to read the complete label and the Material Safety Data Sheet.

As a further word of caution, Zep wishes to advise that serious accidents have resulted from the misuse of "emptied" containers. "Empty" containers retain residue (liquid and/or vapor) and can be dangerous. DO NOT pressurize, cut, weld, braze, solder, drill, grind or expose such containers to heat, flame, or other sources of ignition; they may explode or develop harmful vapors and possibly cause death. Clean empty containers by triple rinsing with water or an appropriate solvent. Empty containers should be sent to a drum reconditioner before reuse.

TERMS AND ABBREVIATIONS USED IN THE MSDS:
BY SECTION ALPHABETICALLY:

SECTION II: HAZARDOUS INGREDIENTS

CAR: Carcinogen - A chemical listed by the National Toxicology Program (NTP), the International Agency for Research on Cancer (IARC) or OSHA as a definite or possible human cancer causing agent.

CAS #: Chemical Abstract Services Registry Number - A universally accepted numbering system for chemical substances.

CBL: Combustible - At temperatures between 100°F and 200°F chemical gives off enough vapor to ignite if a source of ignition is present as tested with a closed cup tester.

CNS: Central Nervous System depressant reduces the activity of the brain and spinal cord.

COR: Corrosive - Causes irreversible alterations in living tissue (e.g. burns).

DESIGNATIONS: Chemical and common names of hazardous ingredients.

EIR: Eye Irritant Only - Causes reversible reddening and/or inflammation of eye tissues.

EXPOSURE LIMITS: The time weighted average (TWA) airborne concentration at which most workers can be exposed without any expected adverse effects. Primary sources include ACGIH TLVs, and OSHA PEL's (TWA, STEL and ceiling limits).

ACGIH: American Conference of Governmental Industrial Hygienists.

CEILING: The concentration that should not be exceeded in the workplace during any part of the working exposure.

OSHA: Occupational Safety and Health Administration

PEL: Permissible Exposure Limit - A set of time weighted average exposure values, established by OSHA, for a normal 8-hour day and a 40-hour work week.

PPM: Parts per million - unit of measure for exposure limits.

(S) SKIN: Skin contact with substance can contribute to overall exposure.

STEL: Short Term Exposure Limit - Maximum concentration

for a continuous 15-minute exposure period.

TLV: Threshold Limit Value - A set of time weighted average exposure limits, established by the ACGIH, for a normal 8-hour day and a 40-hour work week.

FBL: Flammable - At temperatures under 100°F, chemical gives off enough vapor to ignite if a source of ignition is present as tested with a closed cup tester.

HAZARDOUS INGREDIENTS: Chemical substances determined to be potential health or physical hazards by the criteria established in the OSHA Hazard Communication Standard - 29 CFR 1910.1200.

HTX: Highly toxic - the probable lethal dose for 70 kg (150 lb.) man and may be approximated as less than 6 teaspoons (2 tablespoons).

IRR: Irritant - Causes reversible effects in living tissues (e.g. inflammation) - primarily skin and eyes.

N/A: Not Applicable - Category is not appropriate for this product.

N/D: Not Determined - Insufficient information for a determination for this item.

RTCS#: Registry of Toxic Effects of Chemical Substances - an unreviewed listing of published toxicology data on chemical substances.

SARA: Superfund Amendments and Reauthorization Act - Section 313 designates chemicals for possible reporting for the Toxics Release Inventory.

SEN: Sensitizer - Causes allergic reaction after repeated exposure.

TOX: Toxic - The probable lethal dose for a 70 kg (150 lb.) man is one ounce (2 tablespoons) or more.

SECTION III: HEALTH HAZARD DATA

ACUTE EFFECT: An adverse effect on the human body from a single exposure with symptoms developing almost immediately after exposure or within a relatively short time.

CHRONIC EFFECT: Adverse effects that are most likely to occur from repeated exposure over a long period of time.

ESTD PEL/TLV: This estimated, time-weighted average, exposure limit, developed by using a formula provided by the ACGIH, pertains to airborne concentrations from the product as a whole. This value should serve as guide for providing safe workplace conditions to nearly all workers.

HMIS CODES: Hazardous Material Identification System - a rating system developed by the National Paint and Coating Association for estimating the hazard potential of a chemical under normal workplace conditions. These risk estimates are indicated by a numerical rating given in each of three hazard areas (Health/Flammability/Reactivity) ranging from a low of zero to a high of 4. A chronic hazard is indicated with a yes. Consult HMIS training guides for Personal Protection letter codes which indicate necessary protective equipment.

PRIMARY ROUTE OF ENTRY: The way one or more hazardous ingredients may enter the body and cause a generalized-systemic or specific-organ toxic effect.

ING: Ingestion - A primary route of exposure through swallowing of material.

INH: Inhalation - A primary route of exposure through breathing of vapors.

SKIN: A primary route of exposure through contact with

the skin.

SECTION IV: SPECIAL PROTECTION INFORMATION

Where respiratory protection is recommended, use only MSHA and NIOSH approved respirators and dust masks.

MSHA: Mine Safety and Health Administration

NIOSH: National Institute for Occupational Safety and Health.

SECTION V: PHYSICAL DATA

EVAPORATION RATE: It refers to the rate of change from the liquid state to the vapor state at ambient temperature and pressure in comparison to a given substance (e.g. water).

pH: A value representing the acidity or alkalinity of an aqueous solution (Acidic pH = 1; Neutral pH = 7; Alkaline pH = 14)

PERCENT VOLATILE: The percentage of the product (liquid or solid) that will evaporate at 212°F and ambient pressure.

SOLUBILITY IN WATER: A description of the ability of the product to dissolve in water.

SECTION VII: REACTIVITY DATA

HAZARDOUS DECOMPOSITION: Breakdown products expected to be produced upon product decomposition or fire.

INCOMPATIBILITY: Material contact and conditions to avoid to prevent hazardous reactions.

POLYMERIZATION: Indicates the tendency of the product's molecules to combine in a chemical reaction releasing excess pressure and heat.

STABILITY: Indicates the susceptibility of the product to spontaneously and dangerously decompose.

SECTION VIII: SPILL AND DISPOSAL PROCEDURES

RCRA WASTE NOS: RCRA (Resource Conservation and Recovery Act) waste codes (40 CFR 261) applicable to the disposal of spilled or unusable product from the original container.

SECTION X: TRANSPORTATION DATA

CWA: Clean Water Act

RQ: Reportable Quantity - The amount of the specific ingredient that, when spilled to the ground and can enter a storm sewer or natural watershed, must be reported to the National Response Center, and other regulatory agencies.

TSCA: Toxic Substances Control Act - a federal law requiring all commercial chemical substances to appear on an inventory maintained by the EPA.

DISCLAIMER

All statements, technical information and recommendations contained herein are based on available scientific tests or data which we believe to be reliable. The accuracy and completeness of such data are not warranted or guaranteed. We cannot anticipate all conditions under which this information and our products, or the products of other manufacturers in combination with our products, may be used. Zep assumes no liability or responsibility for loss or damage resulting from the improper use or handling of our products, from incompatible product combinations, or from the failure to follow instructions, warnings, and advisories in the product's label and Material Safety Data Sheet.



MATERIAL SAFETY DATA SHEET

AND SAFE HANDLING AND DISPOSAL INFORMATION

41126/93
PAGE 1 OF 3

MANUFACTURING COMPANY
IN MAINTENANCE PRODUCTS

ISSUE DATE: 04/13/90 FORMULA 12475
SUPERSEDES: 08/15/87 PRODUCT NUMBER: 0614

SECTION I - EMERGENCY CONTACTS

ZEP MANUFACTURING COMPANY TELEPHONE: (404) 352-1680 BETWEEN 8:00 AM-5:00 PM (EST)
P.O. BOX 2015 NON-OFFICE HOURS, WEEKENDS, AND HOLIDAYS: AREA CODE 404
ATLANTA, GEORGIA 30301 435-2973, 351-2952, 432-2873
LOCAL POISON CONTROL CENTER *****
TRANSPORTATION EMERGENCY: CHEMTREC: TOLL FREE 1-800-424-9300 ALL CALLS RECORDED
(404) 922-0923 or DISTRICT OF COLUMBIA (202) 462-7616 ALL CALLS RECORDED

SECTION II - HAZARDOUS INGREDIENTS

DESIGNATIONS	TLV (PPM)	EFFECTS (SEE REVERSE)	% IN PROD.
** SODIUM HYDROXIDE ** caustic soda; soda lye; CAS# 1310-73-2; RTECS# WB4900000; OSHA/ACGIH CEILING LIMIT-2 MG/M3	N/D	TOX COR	80-90
** SODIUM CARBONATE ** soda ash; carbonic acid, di-sodium salt; CAS# 497-19-8; RTECS# VZ4050000; OSHA/ACGIH DUST LIMIT= 15mg/m3	N/D	IRR	<5

*UPDATED
12-94*

SPECIAL NOTE: ADVERSE HEALTH EFFECTS WOULD NOT BE EXPECTED UNDER RECOMMENDED CONDITIONS OF USE SO LONG AS PRESCRIBED SAFETY PRECAUTIONS ARE PRACTICED.

SECTION III - HEALTH HAZARD DATA

ACUTE EFFECTS OF OVEREXPOSURE:

Corrosive to skin and eyes. The amount of tissue damage depends on length of contact. Eye contact can result in corneal damage or blindness. Skin contact can produce inflammation and blistering. Inhalation of dust will produce irritation in gastrointestinal or respiratory tract, characterized by burning, sneezing and coughing. Severe over-exposure can produce lung damage, choking, unconsciousness or death.

INGREDIENTS IN THIS PRODUCT MAY AGGRAVATE EXISTING SKIN, EYE, OR RESPIRATORY DISORDERS.



MATERIAL SAFETY DATA SHEET

AND SAFE HANDLING AND DISPOSAL INFORMATION

PAGE 2 OF 3

MANUFACTURING COMPANY
IN MAINTENANCE PRODUCTS

ISSUE DATE: 04/12/90 FORMULA 12475
SUPERSEDES: 08/15/87 PRODUCT NUMBER: 0A14

SECTION III - HEALTH HAZARD DATA (CONTINUED)

CHRONIC EFFECTS OF OVEREXPOSURE:

Repeated exposure of the eyes to a low level of dust can produce eye irritation. Repeated skin exposure can produce local skin destruction or dermatitis. Repeated inhalation of dust can produce varying degrees of respiratory irritation or lung damage.

NONE OF THE INGREDIENTS ARE LISTED AS CARCINOGENS BY IARC, NTP, OR OSHA.

EST'D PEL/TLV: NOT ESTABLISHED PRIMARY ROUTES OF ENTRY: INH.

HMIS CODES: HEALTH 3; FLAM. 0; REACT. 0; PERS. PROTECT. 0; CHRONIC HAZ. YES

FIRST AID PROCEDURES:

SKIN : IMMEDIATELY FLUSH CONTAMINATED SKIN WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. GET MEDICAL ATTENTION IMMEDIATELY.

EYES : IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES, OCCASIONALLY LIFTING UPPER AND LOWER LIDS. GET MEDICAL ATTENTION AT ONCE.

INHALE: MOVE VICTIM TO FRESH AIR. FLUSH MOUTH AND NASAL PASSAGES WITH WATER REPEATEDLY. GET MEDICAL ATTENTION IF IRRITATION PERSISTS.

INGEST: IF THIS PRODUCT IS SWALLOWED, DO NOT INDUCE VOMITING. IF VICTIM IS CONSCIOUS GIVE PLENTY OF WATER TO DRINK. GET MEDICAL ATTENTION AT ONCE.

SECTION IV - SPECIAL PROTECTION INFORMATION

PROTECTIVE CLOTHING : WEAR RUBBER, NEOPRENE, OR NITRILE GLOVES, ALKALI RESISTANT FOOTWEAR, FACE SHIELD, APRON, AND ARM COVERINGS.

EYE PROTECTION : WEAR SPLASH-PROOF SAFETY GOGGLES ESPECIALLY IF CONTACT LENSES ARE WORN.

RESPIRATORY PROTECTION: USE NIOSH-APPROVED DUST MASK IF DUST IS PRESENT.

VENTILATION : IF DUST IS DETECTED, VENTILATE WORK AREA BY OPENING WINDOWS AND USING EXHAUST FANS.

SECTION V - PHYSICAL DATA

BOILING POINT (F) : N/A

SPECIFIC GRAVITY

: N/A

VAPOR PRESSURE(MMHG): N/A

PERCENT VOLATILE BY VOLUME (%)

: < 0.1%

VAPOR DENSITY(AIR=1): N/A

EVAPORATION RATE:

=1): N/A

SOLUBILITY IN WATER : 2 LB/GAL

PH(CONCENTRATE)

: N/A

PH(USE DILUTION OF 1% SOLUTION) : 10.0-14.0

APPEARANCE AND ODOR : WHITE GRANULAR POWDER WITH LIGHT ODOR

SECTION VI - FIRE AND EXPLOSION DATA

FLASH POINT(F) (METHOD USED): N/A

FLAMMABLE LIMITS LEL N/A UEL N/A

EXTINGUISHING MEDIA : NOT COMBUSTIBLE

SPECIAL FIRE FIGHTING: Wear self-contained positive pres. breathing apparatus.

UNUSUAL FIRE HAZARDS : NONE



MATERIAL SAFETY DATA SHEET

AND SAFE HANDLING AND DISPOSAL INFORMATION

PAGE 3 OF 3

MANUFACTURING COMPANY
IN MAINTENANCE PRODUCTS

ISSUE DATE: 04/12/90 FORMULA 12475
SUPERSEDES: 08/15/87 PRODUCT NUMBER: 0414

SECTION VII - REACTIVITY DATA

STABILITY : STABLE
INCOMPATIBILITY(AVOID) : STRONG OXIDIZERS, ACIDS, AND ACTIVE METALS
POLYMERIZATION : WILL NOT OCCUR.
HAZARDOUS DECOMPOSITION: NONE

SECTION VIII - SPILL AND DISPOSAL PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:
OBSERVE SAFETY PRECAUTIONS IN SECTIONS 4 & 9 DURING CLEAN-UP. SWEEP POWDER OR
ABSORB SPILLED TANK-SOLUTION ON INERT ABSORBENT MATERIAL (e.g. ZEP-O-ZORB) AND
PLACE IN A CLEAN D.O.T. SPECIFICATION CONTAINER FOR DISPOSAL. WASH AREA
THOROUGHLY WITH A DETERGENT SOLUTION AND RINSE WELL WITH WATER.

WASTE DISPOSAL METHOD:

LIQUIDS CANNOT BE SENT TO LANDFILLS UNLESS SOLIDIFIED. NEVER DISPOSE OF THIS
PRODUCT WITH GENERAL WASTE. UNUSABLE PRODUCT AND SPENT TANK-SOLUTIONS MAY
REQUIRE DISPOSAL AS A HAZARDOUS WASTE AT A PERMITTED TREATMENT/STORAGE/DISPOSAL
FACILITY. IN MOST STATES, HAZARDOUS WASTES IN TOTAL AMOUNTS OF 220 LBS. OR LESS
PER MONTH MAY BE DISPOSED OF IN A CHEMICAL OR INDUSTRIAL WASTE LANDFILL. IF
COMPANY EFFLUENT IS ULTIMATELY TREATED BY A PUBLICLY OWNED TREATMENT WORKS,
NORMALIZATION OF SPENT TANK-SOLUTIONS WITH SUBSEQUENT DISCHARGE TO SEWER MAY BE
POSSIBLE. CONSULT LOCAL, STATE, AND FEDERAL AGENCIES FOR PROPER DISPOSAL METHOD
IN YOUR AREA.

RCRA HA7. WASTE NOS.: D002 (SEE ABOVE)

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN WHEN HANDLING AND STORING:

Store tightly closed container in a dry area at temps. between 40-120 degrees F.
Store away from strong acids and oxidizing compounds.
KEEP PRODUCT AWAY FROM SKIN AND EYES.
DO NOT BREATHE DUST.
Clothing or shoes which become contaminated with substance should be removed
promptly and not re worn until thoroughly cleaned.
ADD CHEMICAL TO SOLUTION SLOWLY.
KEEP OUT OF THE REACH OF CHILDREN.

SECTION X - TRANSPORTATION DATA

DOT PROPER SHIPPING NAME

CORROSIVE SOLID, N.O.S (SODIUM HYDROXIDE)

HAZARD CLASS: CORROSIVE MATERIAL

DOT I.D. NUMBER : UN1759 DOT LABEL/PLACARD: CORROSIVE

TSCA CHEMICAL INVENTORY - ALL INGREDIENTS ARE LISTED

EPA CWA 40CFR PART 117 SUBSTANCE(RO IN A SINGLE CONTAINER): SODIUM HYDROXIDE
1000#



MATERIAL SAFETY DATA SHEET

AND SAFE HANDLING AND DISPOSAL INFORMATION

12/05/94
PAGE 1 OF 3

MANUFACTURING COMPANY
IN MAINTENANCE PRODUCTS

ISSUE DATE: 02/05/91 ZEP FORMULA 15282
SUPERSEDES: 10/15/90 PRODUCT NUMBER: 5348

SECTION I - EMERGENCY CONTACTS

OUT OF SERVICE
12-95

ZEP MANUFACTURING COMPANY TELEPHONE: (404) 352-1680 BETWEEN 8:00 AM-5:00 PM (EST)
P.O. BOX 2015 NON-OFFICE HOURS, WEEKENDS, AND HOLIDAYS: AREA CODE 404
ATLANTA, GEORGIA 30301 435-2973, 351-2952, 432-2873
LOCAL POISON CONTROL CENTER
TRANSPORTATION EMERGENCY: CHEMTREC: TOLL FREE 1-800-424-9300 ALL CALLS RECORDED
(404) 922-0923 or DISTRICT OF COLUMBIA (202) 483-7616 ALL CALLS RECORDED

SECTION II - HAZARDOUS INGREDIENTS

DESIGNATIONS	TLV (PPM)	EFFECTS (SEE REVERSE)	% IN PROD.
** SODIUM METASILICATE ** silicic acid (H ₂ -Si-O ₃) di- sodium salt; water glass; CAS# 6834-92-0; RTECS# VV9275000; OSHA Dust Limit-2mg/m ³ (for powders only).	N/D	COR	10-20
** SODIUM CARBONATE ** soda ash; carbonic acid, di- sodium salt; CAS# 497-19-8; RTECS# VZ4050000; DUST LIMIT = 15 MG/M ³	N/D	IRR	10-20
** MONOSODIUM PHOSPHATE ** monosodium dihydrogen phosphate; CAS# 7558-80-7; RTECS# WA1900000; OSHA PEL-N/D	N/D	EIR	5-10

SECTION III - HEALTH HAZARD DATA

SPECIAL NOTE: MSDS data pertains to the product as dispensed from the container. Adverse health effects would not be expected under recommended conditions of use (diluted) so long as prescribed safety precautions are practiced.

ACUTE EFFECTS OF OVEREXPOSURE:

Corrosive to skin and eyes. The amount of tissue damage depends on length of contact. Eye contact can result in corneal damage or blindness. Skin contact can produce inflammation and blistering. Inhalation of dust will produce irritation of gastrointestinal or respiratory tract, characterized by burning, sneezing and coughing. Severe over-exposure can produce lung damage, choking, unconsciousness or death.



MATERIAL SAFETY DATA SHEET

AND SAFE HANDLING AND DISPOSAL INFORMATION

PAGE 2 OF 3

MANUFACTURING COMPANY
IN MAINTENANCE PRODUCTS

ISSUE DATE: 02/05/91 ZEP FORMULA 15282
SUPERSEDES: 10/15/90 PRODUCT NUMBER: 5348

SECTION III - HEALTH HAZARD DATA (CONTINUED)

CHRONIC EFFECTS OF OVEREXPOSURE:

Repeated exposure of the eyes to a low level of dust can produce eye irritation. Repeated skin exposure can produce local skin destruction or dermatitis. Repeated inhalation of dust can produce varying degrees of respiratory irritation or lung damage.

NONE OF THE INGREDIENTS ARE LISTED AS CARCINOGENS BY IARC, NTP, OR OSHA.

EST'D PEL/TLV: NOT ESTABLISHED PRIMARY ROUTES OF ENTRY: INH.

HMIS CODES: HEALTH 3; FLAM. 0; REACT. 0; PERS. PROTECT. B ; CHRONIC HAZ. YES

FIRST AID PROCEDURES:

SKIN : IMMEDIATELY FLUSH CONTAMINATED SKIN WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. GET MEDICAL ATTENTION IMMEDIATELY.

EYES : IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES, OCCASIONALLY LIFTING UPPER AND LOWER LIDS. GET MEDICAL ATTENTION AT ONCE.

HALE: MOVE VICTIM TO FRESH AIR. FLUSH MOUTH AND NASAL PASSAGES WITH WATER REPEATEDLY. GET MEDICAL ATTENTION IF IRRITATION PERSISTS.

INGEST: IF THIS PRODUCT IS SWALLOWED, DO NOT INDUCE VOMITING. IF VICTIM IS CONSCIOUS GIVE PLENTY OF WATER TO DRINK. GET MEDICAL ATTENTION AT ONCE.

SECTION IV - SPECIAL PROTECTION INFORMATION

PROTECTIVE CLOTHING : WEAR RUBBER, NEOPRENE, OR NITRILE GLOVES, ALKALI RESISTANT FOOTWEAR, FACE SHIELD, APRON, AND ARM COVERINGS.

EYE PROTECTION : WEAR SPLASH-PROOF SAFETY GOGGLES ESPECIALLY IF CONTACT LENSES ARE WORN.

RESPIRATORY PROTECTION: USE NIOSH-APPROVED DUST MASK IF DUST IS PRESENT.

VENTILATION : IF DUST IS DETECTED, VENTILATE WORK AREA BY OPENING WINDOWS AND USING EXHAUST FANS.

SECTION V - PHYSICAL DATA

BOILING POINT (F) : N/A

SPECIFIC GRAVITY : N/A

VAPOR PRESSURE(MMHG): N/A

PERCENT VOLATILE BY VOLUME (%) : N/A

VAPOR DENSITY(AIR=1): N/A

EVAPORATION RATE(N/A =1): N/A

SOLUBILITY IN WATER : 1 1/2 LB/GAL

PH(CONCENTRATE) : N/A

PH(USE DILUTION OF 1% SOLUTION): 11.8-12.3

APPEARANCE AND ODOR : MOIST, TAN POWDER WITH A MILD AROMA.

SECTION VI - FIRE AND EXPLOSION DATA

FLASH POINT(F) (METHOD USED): N/A (N/A)

FLAMMABLE LIMITS LEL N/A UEL N/A

EXTINGUISHING MEDIA : NON-COMBUSTIBLE.

SPECIAL FIRE FIGHTING: Wear self-contained positive pres. breathing apparatus.

UNUSUAL FIRE HAZARDS : NONE



MATERIAL SAFETY DATA SHEET

AND SAFE HANDLING AND DISPOSAL INFORMATION

PAGE 3 OF 3

MANUFACTURING COMPANY
IN MAINTENANCE PRODUCTS

ISSUE DATE: 02/05/91 ZEP FORMULA 15282
SUPERSEDES: 10/15/90 PRODUCT NUMBER: 5348

SECTION VII - REACTIVITY DATA

STABILITY : STABLE
INCOMPATIBILITY(AVOID) : STRONG ACIDS AND OXIDIZING AGENTS
POLYMERIZATION : WILL NOT OCCUR.
HAZARDOUS DECOMPOSITION: CARBON DIOXIDE, CARBON MONOXIDE, AND OTHER UNIDENTIFIED ORGANIC COMPOUNDS.

SECTION VIII - SPILL AND DISPOSAL PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:
OBSERVE SAFETY PRECAUTIONS IN SECTIONS 4 & 9 DURING CLEAN-UP. PICK UP SPILLED MATERIAL AND PLACE IN A SUITABLE WASTE CONTAINER. WASH AREA THOROUGHLY WITH A DETERGENT SOLUTION AND RINSE AREA WELL WITH WATER.

WASTE DISPOSAL METHOD:

PRODUCT IS NOT CONSIDERED A HAZARDOUS WASTE UNDER RCRA. UNUSABLE MATERIAL SHOULD BE DRUMMED AND TAKEN TO A CHEMICAL OR INDUSTRIAL LANDFILL, OR IF PERMITTED PUT INTO SOLUTION WITH WATER AND FLUSHED INTO A SANITARY SEWER. NEUTRALIZATION OF PH MAY BE A PREREQUISITE FOR SEWER DISPOSAL. CONSULT LOCAL, STATE, AND FEDERAL AGENCIES FOR PROPER METHOD OF DISPOSAL IN YOUR AREA.

RCRA HAZ. WASTE NOS.: N/A

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN WHEN HANDLING AND STORING:

Store tightly closed container in a dry area at temps. between 40-120 degrees F.
Store away from strong acids and oxidizing compounds.
KEEP PRODUCT AWAY FROM SKIN AND EYES.

DO NOT BREATHE DUST.

Clothing or shoes which become contaminated with substance should be removed promptly and not reworn until thoroughly cleaned.
KEEP OUT OF THE REACH OF CHILDREN.

SECTION X - TRANSPORTATION DATA

DOT PROPER SHIPPING NAME

NONE

DOT HAZARD CLASS: N/A

DOT I.D. NUMBER : N/A

DOT LABEL/PLACARD: NONE

IS A TSCA CHEMICAL INVENTORY - ALL INGREDIENTS ARE LISTED

IS A CWA 40CFR PART 117 SUBSTANCE(RQ IN A SINGLE CONTAINER): NONE

REPORT NUMBER: 571
MSDS NO: DZ22366
EFFECTIVE DATE: 01/07/93

VAN WATERS & ROGERS INC.
MATERIAL SAFETY DATA SHEET

PAGE: 001
VERSION: 004

PRODUCT: EB ETHYLENE GLYCOL BUTYL ETHER

ORDER NO:
PROD NO:

VAN WATERS & ROGERS INC., SUBSIDIARY OF UNIVAR (206)889-3400
6100 CARILLON POINT, KIRKLAND, WA 98033

----- EMERGENCY ASSISTANCE -----

FOR EMERGENCY ASSISTANCE INVOLVING CHEMICALS CALL - CHEMTREC
(800)424-9300

----- FOR PRODUCT AND SALES INFORMATION -----

CONTACT YOUR LOCAL VAN WATERS & ROGERS BRANCH OFFICE AT
VW&R PORTLAND 503-222-1721 PORTLAND, OR

PRODUCT NAME:
EB ETHYLENE GLYCOL BUTYL ETHER

MSDS #: DZ22366

1. INGREDIENTS: (% w/w, unless otherwise noted)

Ethylene glycol n-butyl ether CAS# 000111-76-2 99%

This document is prepared pursuant to the OSHA Hazard Communication Standard (29 CFR 1910.1200). In addition, other substances not 'Hazardous' per this OSHA Standard may be listed. Where proprietary ingredient shows, the identity may be made available as provided in this standard.

2. PHYSICAL DATA:

BOILING POINT: 340F
VAP PRESS: 0.88 mmHg @ 25C
VAP DENSITY: (Air = 1) 4.10
SOL. IN WATER: Infinitely.
SP. GRAVITY: .897 @ 25/25C
APPEARANCE: Water white liquid.
ODOR: Ether-like odor.

3. FIRE AND EXPLOSION HAZARD DATA:

REPORT NUMBER: 971
MSDS NO: UZ22366
EFFECTIVE DATE: 01/07/93

VAN WATERS & ROBERTS INC.
MATERIAL SAFETY DATA SHEET

PAGE: 002
VERSION: 004

PRODUCT: ED ETHYLENE GLYCOL BUTYL ETHER

ORDER NO:
PROD NO :

FLASH POINT: 150F
METHOD USED: TCC

FLAMMABLE LIMITS
LFL: 1.1% Vol.
UFL: 10.6% Vol.

EXTINGUISHING MEDIA: Water fog, CO2, dry chemical, foam.
For large scale fires, alcohol resistant foams are preferred if available. General purpose synthetic foams or protein foams may function, but much less effectively. Water may be used to flush spills away from fire exposures and to dilute spills to non-flammable mixtures. If possible, contain fire run off water.

FIRE & EXPLOSION HAZARDS: Auto ignition temperature is 471F (244C).

Keep unnecessary people away; isolate hazard area and deny unnecessary entry. When using water spray, boil over may occur when the product temperature reaches the boiling point of water (tank type scenarios, not spills). See also 'STORAGE AND HANDLING' section of this mds.

FIRE-FIGHTING EQUIPMENT: Wear positive-pressure, self-contained breathing apparatus and full protective equipment.

4. REACTIVITY DATA:

STABILITY: (CONDITIONS TO AVOID) Prevent contact with zinc, magnesium, and galvanized metals.

INCOMPATIBILITY: (SPECIFIC MATERIALS TO AVOID) Oxidizing material.

HAZARDOUS DECOMPOSITION PRODUCTS: Combustion may produce carbon dioxide and toxic carbon monoxide. Unidentified organic compounds may be formed during combustion.

HAZARDOUS POLYMERIZATION: Will not occur.

5. ENVIRONMENTAL AND DISPOSAL INFORMATION:

ACTION TO TAKE FOR SPILLS/LEAKS: Keep out of sewers, storm drains, surface waters and soil. Add absorbent; remove with rubber shovel.

REPORT NUMBER: 871

UAM WATERS & ROGERO INC.

PAGE: 003

MSDS NO: DZ22366

MATERIAL SAFETY DATA SHEET

EFFECTIVE DATE 01/07/93

VERSION: 004

PRODUCT: EB ETHYLENE GLYCOL BUTYL ETHER

ORDER NO:

PROD NO:

DISPOSAL METHOD: ++DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER++. For unused or uncontaminated material, the preferred management options are to send to a licensed recycler, reclaimer, or incinerator. The same management options are recommended for used or contaminated material, although additional evaluation is required. (see, for example, 40CFR Part 261, "Identification and Listing of Hazardous Waste.") Any disposal practice must be in compliance with federal, state, provincial, and local laws and regulations. Check with appropriate agencies for your location. For additional information, see Section 4 (REACTIVITY DATA) and "REGULATORY INFORMATION".

As a service to its customers, the manufacturer can provide lists of companies which recycle, reprocess or manage chemicals and companies that recondition used drums. Telephone the Customer Information Center at 800/447-4366 or 517/892-1556 for further details.

6. HEALTH HAZARD DATA:

EYE: May cause moderate eye irritation. May cause moderate corneal injury. Effects may be slow to heal. Vapors may irritate eyes.

SKIN CONTACT: Prolonged or repeated exposure may cause skin irritation.

SKIN ABSORPTION: A single prolonged exposure may result in the material being absorbed in harmful amounts. Excessive exposure may cause hemolysis, thereby impairing the blood's ability to transport oxygen. The LD50 for skin absorption in rabbits is 220 mg/kg. Repeated minor exposure may result in absorption of harmful amounts.

INGESTION: Single dose oral toxicity is moderate. The oral LD50 for rats is 470 mg/kg. Small amounts swallowed incidental to normal handling operations are not likely to cause injury; swallowing amounts larger than that may cause injury. One case of massive ingestion (i.e., attempted suicide) reported blood (hemolysis) and kidney effects.

INHALATION: A single prolonged (hours) excessive inhalation exposure may cause adverse effects. Excessive exposure may cause irritation to upper respiratory tract. Observations in animals include blood and kidney effects. The LC50 for rats is 70% LWT in 4 hours.

PRODUCT: EB ETHYLENE GLYCOL BUTYL ETHER

ORDER NO:

PROD NO:

SYSTEMIC (OTHER TARGET ORGAN) EFFECTS: Observations in animals include blood and kidney effects.

TERATOLOGY (BIRTH DEFECTS): Birth defects are unlikely. Exposures having no effect on the mother should have no effect on the fetus. Did not cause birth defects in animals; other effects were seen in the fetus only at doses which caused toxic effects to the mother.

REPRODUCTIVE EFFECTS: In animal studies, fertility or reproduction were affected only following potentially lethal oral doses.

MUTAGENICITY (EFFECTS ON GENETIC MATERIAL): Results of mutagenicity tests in animals have been negative. Results of in vitro (test tube) mutagenicity tests have been inconclusive.

7. FIRST AID:

EYES: Irrigate with flowing water immediately and continuously for 15 minutes. Consult medical personnel.

SKIN: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician if irritation persists. Wash clothing before reuse. Destroy contaminated shoes.

INGESTION: Induce vomiting if large amounts are ingested. Consult medical personnel.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.

NOTE TO PHYSICIAN: No specific antidote. Supportive care. Treatment based on judgment of the physician in response to reactions of the patient.

8. HANDLING PRECAUTIONS:

EXPOSURE GUIDELINE(S): OSHA PEL and ACGIH TLV are 25 ppm, skin.

VENTILATION: Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

REPORT NUMBER: 871
MSDS NO: D222366
EFFECTIVE DATE: 01/07/93

VAN WATERS & ROGERS INC.
MATERIAL SAFETY DATA SHEET

PAGE: 005
VERSION: 004

PRODUCT: EB ETHYLENE GLYCOL BUTYL ETHER

ORDER NO:
PROD NO:

RESPIRATORY PROTECTION: Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required for certain operations, use an approved air-purifying respirator. For emergency and other conditions where the exposure guidelines may be greatly exceeded, use an approved positive-pressure self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply.

SKIN PROTECTION: Use protective clothing impervious to this material. Selection of specific items such as gloves, boots, apron, or full-body suit will depend on operation. Remove contaminated clothing immediately, wash skin area with soap and water, and launder clothing before reuse. Contaminated leather items, such as shoes, belts and watchbands, should be removed and destroyed.

EYE PROTECTION: Use chemical goggles. If vapor exposure causes eye discomfort, use a full-face respirator.

5. ADDITIONAL INFORMATION:

SPECIAL PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Handle with care. Avoid all skin and eye contact. Avoid breathing vapor.

Trace quantities of ethylene oxide (EO) may be present in this product. While these trace quantities could accumulate in headspace areas of storage and transport vessels, they are not expected to create a condition which will result in EO concentrations greater than 0.5 ppm (eight-hour TWA) in the breathing zones of the workplace for appropriate applications. OSHA has established a permissible exposure limit of 1.0 ppm eight-hour TWA for EO. (Code of Federal Regulations, Part 1910.1047 of Title 29).

Spills of these organic liquids on hot fibrous insulations may lead to lowering of the autoignition temperature possibly resulting in spontaneous combustion.

Containers, even those that have been emptied, can contain vapors. Do not cut, drill, grind, weld or perform similar operations on or near empty containers.

Will produce flammable vapors above the flash point.

MSDS STATUS: Revised Regulatory Information.

REPORT NUMBER: 971
MSDS NO: D2223ae
EFFECTIVE DATE: 01/07/93

VAN WATERS & ROGERS INC.
MATERIAL SAFETY DATA SHEET

PAGE: 006
VERSION: 004

PRODUCT: EE ETHYLENE GLYCOL BUTYL ETHER

ORDER NO:
PROD NO :

REGULATORY INFORMATION: (Not meant to be all-inclusive--selected regulations represented).

NOTICE: The information herein is presented in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ from one location to another; it is the buyer's responsibility to ensure that its activities comply with federal, state or provincial, and local laws. The following specific information is made for the purpose of complying with numerous federal, state or provincial, and local laws and regulations. See MSD Sheet for health and safety information.

U.S. REGULATIONS

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SARA 313 INFORMATION: This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

CHEMICAL NAME	CAS NUMBER	CONCENTRATION
GLYCOL ETHERS		99 %

SARA HAZARD CATEGORY: This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

A immediate health hazard
A delayed health hazard
A fire hazard

TOXIC SUBSTANCES CONTROL ACT (TSCA):

All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory.

The CAS number for TSCA is 000111-76-2.

REPORT NUMBER: 971
MSDS NO: UZ22366
EFFECTIVE DATE: 01/07/93

VAN MATERS & ROGERS INC.
MATERIAL SAFETY DATA SHEET

PAGE: 007

VERSION: 004

PRODUCT: EB ETHYLENE GLYCOL BUTYL ETHER

ORDER NO:
PROD NO :

CANADIAN REGULATIONS

=====

The Workplace Hazardous Materials Information System (W.H.M.I.S.)
Classification for this product is:

B3
D1B
U2B

=====

The Transportation of Dangerous Goods Act (T.D.G.A.) classification for
this product is:

ETHYLENE GLYCOL MONOBUTYL ETHER
Class 2.1/UN 2349/III

=====

VAN WATERS & ROGERS INC.
MATERIAL SAFETY DATA SHEET

PRODUCT: EP ETHYLENE GLYCOL BUTYL ETHER

ORDER NO :
PROD NO :

FOR ADDITIONAL INFORMATION

CONTACT: MSBS COORDINATOR VW&R PORTLAND
DURING BUSINESS HOURS, PACIFIC TIME (206)889-3400

02/12/93 14:41 PRODUCT: CUST NO: OPDEF NO:

NOTICE

VAN WATERS & ROGERS INC. ("VWR") EXPRESSLY DISCLAIMS ALL EXPRESS OR

IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

WITH RESPECT TO THE PRODUCT OR INFORMATION PROVIDED HEREIN. **

ALL INFORMATION APPEARING HEREIN IS BASED UPON DATA OBTAINED FROM THE MANUFACTURER AND/OR RECOGNIZED TECHNICAL SOURCES. WHILE THE INFORMATION IS BELIEVED TO BE ACCURATE, VW&R MAKES NO REPRESENTATIONS AS TO ITS ACCURACY OR SUFFICIENCY. CONDITIONS OF USE ARE BEYOND VW&RS CONTROL AND THEREFORE USERS ARE RESPONSIBLE TO VERIFY THIS DATA UNDER THEIR OWN OPERATING CONDITIONS TO DETERMINE WHETHER THE PRODUCT IS SUITABLE FOR THEIR PARTICULAR PURPOSES AND THEY ASSUME ALL RISKS OF THEIR USE, HANDLING, AND DISPOSAL OF THE PRODUCT, OR FROM THE PUBLICATION OR USE OF, OR RELIANCE UPON, INFORMATION CONTAINED HEREIN. THIS INFORMATION RELATES ONLY TO THE PRODUCT DESIGNATED HEREIN, AND DOES NOT RELATE TO ITS USE IN COMBINATION WITH ANY OTHER MATERIAL OR IN ANY OTHER PROCESS.

* * * E N D O F M S D S * * *

REMOVED ~~FROM~~ FROM FACILITY
AND USE JULY 2004



Model 110 & 5 gal bucket

Material Safety Data Sheet

Immersion Cleaner and Cold Parts Cleaner

Part Numbers 699, 6861, 9699

IMMERSION CLEANER AND COLD PARTS CLEANER

MATERIAL SAFETY DATA SHEET FOR U.S.A. AND CANADA

SECTION 1 -- PRODUCT AND PREPARATION INFORMATION

PRODUCT INFORMATION

IDENTITY (TRADE NAME): IMMERSION CLEANER AND COLD PARTS CLEANER

SYNONYMS: None

SK PART NUMBER(S): 699, 6861, 9699

FAMILY/CHEMICAL NAME: None

PRODUCT USE: For cleaning carburetors and metal parts.
If this product is used in combination with other chemicals, refer to the Material Safety Data Sheets for those chemicals.

24-HOUR EMERGENCY TELEPHONE

These numbers are for emergency use only. If you desire non-emergency information about this product, please call a telephone number listed below.

MEDICAL:

1-800-752-7869 (U.S.A.)
1-312-942-5969 (CANADA)
RUSH POISON CONTROL CENTER
CHICAGO, ILLINOIS, U.S.A.

TRANSPORTATION:

1-708-888-4660 (U.S.A.)
SAFETY-KLEEN ENVIRONMENT,
HEALTH AND SAFETY DEPARTMENT
1-613-996-6666 (CANADA)
CANUTEC

MANUFACTURER/SUPPLIER:

Safety-Kleen Corp. - 777 Big Timber Road - Elgin, IL, U.S.A. 60123
Telephone number: 1-800-669-5840
Safety-Kleen Canada Inc. - 3090 Blvd. Le Carrefour - Suite 300 - Chomedey Laval
Quebec, Canada H7T 2J7 Telephone number: 1-800-363-2260

PREPARATION INFORMATION

MSDS FORM NO.: 82411

REVISION DATE: March 18, 1992

ORIGINAL ISSUE DATE: December 1, 1989

SUPERSEDES: July 13, 1990

PREPARED BY: Product MSDS Coordinator

APPROVED BY: MSDS Task Force

TELEPHONE NUMBER: For Product Technical Information Call 1-312-694-2700 (U.S.A.);
1-800-363-2260 (Canada)

SECTION 2 -- HAZARDOUS COMPONENTS

NAME	SYNONYM	CAS NO.	WT %	OSHA PEL		ACGIH TLV		OTHER DATA	
				TWA	STEL	TWA	STEL	LD ^a	LC
Aromatic 150 ^c	Heavy aromatic solvent naphtha	64742-94-5	30-60	N.Av.	N.Av.	N.Av.	N.Av.	>5000 Exxon recommended	N.Av.
N-Methyl-2-pyrrolidone	1-Methyl-2-pyrrolidinone	872-50-4	10-30	N.Av.	N.Av.	N.Av.	N.Av.	3914	N.Av.
Dipropylene glycol monomethyl ether	(2-methoxymethyl ethoxy)-propanol	34590-94-8	7-13	100 ppm (skin)	150 ppm (skin)	100 ppm (skin)	150 ppm (skin)	5135	N.Av.
Oleic acid	Red Oil	112-80-1	5-10	5 ^c mg/m ³	N.Av.	10 ^d mg/m ³	N.Av.	74000	N.Av.
Monoethanolamine	2-Amino-ethanol	141-43-5	3-7	3 ppm	6 ppm	3 ppm	6 ppm	1720	N.Av.

IMMERSION CLEANER AND COLD PARTS CLEANER

MATERIAL SAFETY DATA SHEET FOR U.S.A. AND CANADA

*Naphthalene ^h	Naphthalin	91-20-3	0-6**	10 ppm	15 ppm	10 ppm	15 ppm	490	N.Av.
*1,4-Dichlorobenzene	Dichlorobenzene, para-	106-46-7	0-0.4**	75 ppm	110 ppm	75 ppm	110 ppm	500	N.Av.
*Methylene chloride	Dichloromethane	75-09-2	0-0.3**	500 ppm	N.Av.	50 ppm	N.Av.	1600	88000 ^h mg/m ³ /30 minutes
*Perchloroethylene	Tetrachloroethylene	127-18-4	0-0.5**	25 ppm	N.Av.	50 ppm	200 ppm	262 ^g	34200 ^b mg/m ³ /8 hours

N.Ap. = Not Applicable

N.Av. = Not Available

*See Section 9-Other Regulatory Information

**Even though the concentration range does not fall under the ranges prescribed by WHMIS, this is the actual range which varies with each batch of the product.

^aOral-Rat LD50 (mg/kg)

^bInhalation-Rat LC50

^cExxon recommended 8hr workday exposure: 100 ppm

^dVegetable oil mists

^eRespirable fraction

^fInhalation-Rat LCLo

^gMonsanto MSDS

^hConstituent of Aromatic 150

SECTION 3 -- EMERGENCY AND FIRST AID PROCEDURES

EYES: For direct contact, flush eyes with water for 15 minutes lifting upper and lower lids occasionally. If irritation or redness from exposure to vapor or mist develops, move victim away from exposure into fresh air. Consult physician if irritation or pain persists.

SKIN: Remove contaminated clothing and shoes. Wash skin twice with soap and water. Consult physician if irritation or pain persists.

INHALATION: (Breathing) Remove to fresh air immediately. Use oxygen if there is difficulty breathing or artificial respiration if breathing has stopped. Do not leave victim unattended. Seek immediate medical attention if necessary.

INGESTION: (Swallowing) Seek immediate medical attention. Do NOT induce vomiting. If spontaneous vomiting occurs, keep head below hips to avoid aspiration (into lungs).

SPECIAL NOTE TO PHYSICIAN: Treat symptomatically and supportively. Administration of gastric lavage, if warranted, should be performed by qualified medical personnel. Contact Rush Poison Control Center (Section 1) for additional medical information.

SECTION 4 -- HEALTH HAZARD DATA AND TOXICOLOGICAL PROPERTIES

PRIMARY ROUTES OF EXPOSURE: Eye and skin contact; inhalation, ingestion.

EXPOSURE LIMITS: See Section 2.

SIGNS AND SYMPTOMS OF EXPOSURE

ACUTE: **Eyes:** Contact with liquid or exposure to vapor may cause irritation, tearing and burns.

Skin: Contact removes skin oils, possibly leading to irritation and dermatitis. Dipropylene glycol monomethyl ether is a skin absorption hazard.

Inhalation (Breathing): High concentrations of vapor or mist may be irritating to the respiratory tract, may cause nausea and vomiting, may cause dizziness, impaired coordination, anesthesia and other central nervous system effects or in more severe cases inebriation or unconsciousness. When in contact with mucous membranes, liquid aromatic hydrocarbons may cause vasodilation and chemical pneumonitis with pulmonary edema, hemorrhaging, and tissue necrosis. Naphthalene poisoning may affect eyes.

IMMERSION CLEANER AND COLD PARTS CLEANER

MATERIAL SAFETY DATA SHEET FOR U.S.A. AND CANADA

Ingestion (Swallowing): Harmful or fatal if swallowed. May cause irritation of the throat, nausea, vomiting, abdominal pain, symptoms of central nervous system depression and myocardial injury. Monoethanolamine may cause mucosal burns of the mouth and esophagus. Aspiration into the lungs during ingestion or vomiting may cause mild to severe pulmonary injury and possibly death.

CHRONIC: Prolonged or repeated eye contact may cause tissue injury or skin contact may cause drying and cracking or dermatitis. Repeated or prolonged exposure to monoethanolamine may cause inflammatory and ulcerative changes in the mouth and possibly bronchial and gastrointestinal disturbances. Cataracts and corneal ulcerations have been reported in humans following repeated or prolonged exposure to naphthalene.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

Individuals with pre-existing liver, kidney, respiratory, central nervous system or skin disorders may have increased susceptibility to the effects of exposure.

CARCINOGENICITY:

IARC classifies chemicals by their carcinogenic risk, including agents that are known, probable or possible carcinogens. NTP classifies chemicals as either known carcinogens or for which there is a limited evidence of carcinogenicity in humans or sufficient evidence of carcinogenicity in experimental animals. ACGIH recognizes two categories of carcinogens, confirmed or suspected human carcinogens.

Methylene chloride, perchloroethylene and 1,4-dichlorobenzene are listed by IARC as possible carcinogens. Methylene chloride, perchloroethylene and 1,4-dichlorobenzene are classified by NTP as having limited evidence of carcinogenicity in humans or sufficient evidence of carcinogenicity in experimental animals. Methylene chloride is recognized by ACGIH as a suspected human carcinogen.

Also see Section 9.

OTHER POTENTIAL HEALTH HAZARDS:

The following information is required by Canadian WHMIS regulations. Irritancy is covered in Signs and Symptoms of Exposure in Section 4. There is no known human sensitization, toxicologically synergistic product or teratogenicity associated with this material. N-methyl-2-pyrrolidone and methylene chloride have demonstrated experimental effects for reproductive toxicity and mutagenicity.

SECTION 5 -- FIRE AND EXPLOSION HAZARD DATA

EMERGENCY RESPONSE GUIDE NUMBER:

60
Reference Emergency Response Guidebook (DOT 5800.5)

FIRE AND EXPLOSION HAZARDS:

Decomposition and combustion products may be toxic. Heated containers may rupture, explode or be thrown into the air. Vapors are heavier than air and may travel great distances to ignition source and flash back. Not sensitive to mechanical impact. Material may be sensitive to static discharge, which could result in fire or explosion.

FIRE FIGHTING PROCEDURES:

NFPA 704 Rating 2-2-0 (Health-Fire-Reactivity)
Keep storage containers cool with water spray. Positive pressure self-contained breathing apparatus (SCBA) and structural firefighters' protective clothing will provide limited protection.

EXTINGUISHING MEDIA:

Carbon dioxide, regular foam, dry chemical, water spray.

CONDITIONS OF FLAMMABILITY:

Heat, sparks or flame.

FLASH POINT:

150°F (65°C) (approximately) Tag Closed Cup

TOIGNITION TEMPERATURE:

Not available.

FLAMMABLE LIMITS IN AIR:

LOWER: 0.8 Vol. %

UPPER: 7.0 Vol. %

IMMERSION CLEANER AND COLD PARTS CLEANER
MATERIAL SAFETY DATA SHEET FOR U.S.A. AND CANADA

**HAZARDOUS COMBUSTION
PRODUCTS:**

Burning may produce carbon monoxide, nitrogen oxides, irritating smoke and fumes.

SECTION 6 -- REACTIVITY DATA

STABILITY:

Stable under normal temperatures and pressures, and not reactive with water.

**INCOMPATIBILITY (MATERIALS AND
CONDITIONS TO AVOID):**

Avoid acids, oxidizing agents, heat, sparks or flame. Oleic acid can react with perchlorates and perchloric acid to form explosive products.

HAZARDOUS POLYMERIZATION:

Not known to occur under normal temperatures and pressures.

**HAZARDOUS DECOMPOSITION
PRODUCTS:**

None under normal temperatures and pressures.

SECTION 7 -- PREVENTIVE MEASURES

PRECAUTIONS FOR SAFE USE AND HANDLING

**HANDLING
PRECAUTIONS:**

Keep away from heat, sparks or flame. Avoid contact with eyes, skin, clothing or shoes. Use in well ventilated area and avoid breathing vapor or mist.

**PERSONAL
HYGIENE:**

Use good personal hygiene. Wash thoroughly with soap and water after handling and before eating, drinking or using tobacco products. Clean contaminated clothing, shoes and protective equipment before reuse. Discard contaminated clothing, shoes or protective equipment if they cannot be thoroughly cleaned.

**SHIPPING AND
STORING
PRECAUTIONS:**

Keep container tightly closed when not in use and during transport. Do not pressurize, cut, heat, weld, grind or expose containers to flame or other sources of ignition. Empty product containers may contain product residue. See Section 9 for Packing Group information.

**SPILL
PROCEDURES:**

Remove all ignition sources. Do not touch or walk through spilled material; stop leak if you can do it without risk. Wear protective equipment specified in Section 7, CONTROL MEASURES. Ventilate area and avoid breathing vapor or mist. For large spills, isolate area and deny entry; dike far ahead of liquid spill for later disposal. Contain away from surface waters and sewers. If possible, contain as a liquid for possible re-refining or sorb with compatible sorbent material and shovel with a non-sparking tool into closable container for disposal. See Emergency Response Guidebook (DOT P 5800.5) Guide Number 60 for more information.

**WASTE DISPOSAL
METHODS:**

Dispose in accordance with federal, state, provincial and local regulations. Contact Safety-Kleen regarding recycling or proper disposal.

CONTROL MEASURES

**EYE
PROTECTION:**

Where there is likelihood of eye contact, wear chemical goggles and faceshield. Do NOT wear contact lenses.

**PROTECTIVE
GLOVES:**

Use Neoprene or equivalent gloves to prevent contact with skin. Do NOT use Latex or equivalent gloves.

**RESPIRATORY
PROTECTION:**

Use NIOSH/MSHA-approved respiratory protective equipment when concentration of vapor or mist exceeds applicable exposure limit. A self-contained breathing apparatus (SCBA) and full protective equipment is required for large spills or fire emergencies. Selection and use of respiratory protective equipment should be in accordance in the U.S.A. with OSHA General Industry Standard 29 CFR 1910.134 and in Canada with CSA Standard Z94.4-M1982.

IMMERSION CLEANER AND COLD PARTS CLEANER

MATERIAL SAFETY DATA SHEET FOR U.S.A. AND CANADA

ENGINEERING CONTROLS:

Provide process enclosure or local ventilation needed to maintain concentration of vapor or mist below applicable exposure limits. Where explosive mixtures may be present, systems safe for such locations should be used.

OTHER PROTECTIVE EQUIPMENT:

Where spills and splashes are possible, wear appropriate solvent-resistant boots, apron or other protective clothing. Clean water should be available in work areas for flushing the eyes and skin.

SECTION 8 -- PHYSICAL DATA

PHYSICAL STATE, APPEARANCE AND ODOR:

Liquid, clear, brown

ODOR THRESHOLD:

Not available

SPECIFIC GRAVITY:

0.95 (water = 1)

DENSITY:

7.9 lbs/gal

VAPOR DENSITY:

4.4 (air = 1)

VAPOR PRESSURE:

11 mm Hg at 77°F (25°C)

BOILING POINT:

210 to 439°F (99 to 226°C)

FREEZING POINT:

Less than 10°F (-12°C)

pH:

11

VOLATILE ORGANIC COMPOUNDS: (US EPA DEFINITION)

85.2 WT %; 6.7 lbs/gal; 809 g/l

EVAPORATION RATE:

1.0 (butyl acetate = 1)

SOLUBILITY IN WATER:

Complete

COEFFICIENT OF WATER/OIL DISTRIBUTION:

Not available

MOLECULAR WEIGHT:

127

SECTION 9 -- OTHER REGULATORY INFORMATION

TRANSPORTATION INFORMATION

DOT PROPER SHIPPING NAME: CORROSIVE LIQUIDS, N.O.S. (contains Monoethanolamine)

DOT CLASS: Class 8

DOT ID NUMBER: UN1760, Packing Group III

TDG CLASSIFICATION: Corrosive Liquids, N.O.S. (contains monoethanolamine)
Class 8, UN1760, Packing Group III

SARA TITLE III:

Product contains toxic chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372. Toxic constituents are listed with an asterisk in Section 2 of this Material Safety Data Sheet.

IMMERSION CLEANER AND COLD PARTS CLEANER

MATERIAL SAFETY DATA SHEET FOR U.S.A. AND CANADA

Product poses the following physical and health hazards as defined in 40 CFR 370.3 (Sections 311, 312 of SARA Title III):

Immediate (Acute) Health Hazard
Delayed (Chronic) Health Hazard
Fire Hazard

WHMIS CLASSIFICATION:

Class B3, Combustible Liquids;
Class D2A, Infectious and Toxic Materials, Other Toxic Effects, Very Toxic Material;
Class D2B, Infectious and Toxic Materials, Other Toxic Effects, Toxic Material

CALIFORNIA:

This product contains detectable amounts of benzene CAS No. 71-43-2, 1,4-dichlorobenzene CAS No. 106-46-7, methylene chloride CAS No. 75-09-2, perchloroethylene CAS No. 127-18-4 and trichloroethylene CAS No. 79-01-6. These materials are listed by the State of California as known carcinogens.

User assumes all risks incident to the use of this product. To the best of our knowledge, the information contained herein is accurate. However, Safety-Kleen assumes no liability whatsoever for the accuracy or completeness of the information contained herein. No representations or warranties, either expressed or implied, or merchantability, fitness for a particular purpose or of any other nature are made hereunder with respect to information or the product to which information refers. The data contained on this sheet apply to the material as supplied to the user.





Material Safety Data Sheet

**SAFETY-KLEEN
PREMIUM SOLVENT**

Part Number: 6605

SAFETY-KLEEN PREMIUM SOLVENT
MATERIAL SAFETY DATA SHEET FOR U.S.A. AND CANADA

SECTION 1 -- PRODUCT AND PREPARATION INFORMATION

PRODUCT INFORMATION

IDENTITY (TRADE NAME): SAFETY-KLEEN PREMIUM SOLVENT

SYNONYMS: Parts Washer Solvent; Petroleum Distillates; Petroleum Naphtha; Naphtha, Solvent; Stoddard Solvent; Mineral Spirits

SK PART NUMBER(S): 6605

FAMILY/CHEMICAL NAME: Petroleum hydrocarbon

PRODUCT USE: Cleaning and degreasing metal parts.
If this product is used in combination with other chemicals, refer to the Material Safety Data Sheets for those chemicals.

24-HOUR EMERGENCY TELEPHONE

These numbers are for emergency use only. If you desire non-emergency information about this product, please call a telephone number listed below.

MEDICAL:

1-800-752-7869 (U.S.A.)
1-312-942-5969 (CANADA)
RUSH POISON CONTROL CENTER
CHICAGO, ILLINOIS, U.S.A.

TRANSPORTATION:

1-708-888-4660 (U.S.A.)
SAFETY-KLEEN ENVIRONMENT,
HEALTH AND SAFETY DEPARTMENT
1-613-996-6666 (CANADA)
CANUTEC

MANUFACTURER/SUPPLIER: Safety-Kleen Corp. - 1000 North Randall Road - Elgin, IL, U.S.A. 60123-7857
Telephone number: 1-800-669-5840
Safety-Kleen Canada Inc. - 300 Woolwich Street South - Breslau, ON, Canada N0B 1M0
Telephone number: 1-800-265-2792

PREPARATION INFORMATION

MSDS FORM NO.: 82529 **REVISION DATE:** February 2, 1994

ORIGINAL ISSUE DATE: January 7, 1993 **SUPERSEDES:** February 11, 1993

PREPARED BY: Product MSDS Coordinator **APPROVED BY:** MSDS Task Force

TELEPHONE NUMBER: For Product Technical Information Call 1-312-694-2700 (U.S.A.);
1-519-648-2291 (Canada)

SECTION 2 -- HAZARDOUS COMPONENTS

NAME	SYNONYM	CAS NO.	WT%	OSHA PEL		ACGIH TLV		OTHER DATA	
				TWA	STEL	TWA	STEL	LD ^a	LC ^b
Distillates (petroleum) hydrotreated light	Solvent naphtha (petroleum), heavy aliph., hydrotreated	64742-47-8 ^{e,f}	100	500 ^{c,d} ppm	N.Av.	100 ^c ppm	N.Av.	> 5000	> 5500 ^c mg/m ³ /4 hours

^aAv. = Not Available
^bOral-Rat LD50 (mg/kg)
^cInhalation-Rat LC50

^eFor Stoddard Solvent CAS 8052-41-3

^dReference source 1910.1000 29 CFR Ch. XVII (7-1-92 edition): 100 ppm TWA
^eFor Stoddard Solvent: 29500 mg/m³ (approximately 5000 ppm) IDLH
^fFor Petroleum Distillates: 10000 ppm IDLH

SAFETY-KLEEN PREMIUM SOLVENT
MATERIAL SAFETY DATA SHEET FOR U.S.A. AND CANADA

SECTION 3 -- EMERGENCY AND FIRST AID PROCEDURES

EYES: For direct contact, flush eyes with water for 15 minutes lifting upper and lower lids occasionally. If irritation or redness from exposure to vapor or mist develops, move victim away from exposure into fresh air. Consult physician if irritation or pain persists.

SKIN: Remove contaminated clothing and shoes. Wash skin twice with soap and water. Consult physician if irritation or pain persists.

**INHALATION:
(Breathing)** Remove to fresh air immediately. Use oxygen if there is difficulty breathing or artificial respiration if breathing has stopped. Do not leave victim unattended. Seek immediate medical attention if necessary.

**INGESTION:
(Swallowing)** Seek immediate medical attention. Do NOT induce vomiting. If spontaneous vomiting occurs, keep head below hips to avoid aspiration (breathing) into the lungs.

**SPECIAL
NOTE TO
PHYSICIAN:** Treat symptomatically and supportively. Administration of gastric lavage, if warranted, should be performed by qualified medical personnel. Contact Rush Poison Control Center (see Section 1) for additional medical information.

SECTION 4 -- HEALTH HAZARD DATA AND TOXICOLOGICAL PROPERTIES

PRIMARY ROUTES OF EXPOSURE: Eye and skin contact; inhalation, ingestion.

EXPOSURE LIMITS: See Section 2.

SIGNS AND SYMPTOMS OF EXPOSURE

ACUTE: *Eyes:* Contact with liquid or exposure to vapors may cause mild to moderate irritation with watering, stinging, or redness.

Skin: Contact with liquid or exposure to vapors may cause mild to severe irritation. Contact with liquid or exposure to vapors may cause redness, drying, cracking, burning, or dermatitis. No significant skin absorption hazard.

Inhalation (Breathing): High concentrations of vapor or mist may irritate the nose, throat, or respiratory tract. High concentrations of vapor or mist may cause nausea, vomiting, or irregular heartbeat. High concentrations of vapor or mist may cause headaches, dizziness, incoordination, numbness, unconsciousness, and other central nervous system effects. Massive acute exposure may result in rapid central nervous system depression with sudden collapse, deep coma, and death.

Ingestion (Swallowing): Low order of acute oral toxicity. May cause throat irritation, nausea, vomiting, myocardial (muscular tissue of the heart) injury, arrhythmias (irregular heartbeats), and symptoms of central nervous system effects as listed for *ACUTE Inhalation*. Breathing material into the lungs during ingestion or vomiting may cause mild to severe pulmonary (lung) injury and possibly death.

CHRONIC: Prolonged or repeated eye contact may cause conjunctivitis. Prolonged or repeated skin contact may cause drying, cracking, dermatitis, or burns.

**MEDICAL CONDITIONS
AGGRAVATED BY
EXPOSURE:**

Individuals with pre-existing lung, cardiac, central nervous system, or skin disorders may have increased susceptibility to the effects of exposure.

CARCINOGENICITY: Not applicable.

**OTHER POTENTIAL
HEALTH HAZARDS:**

The following information is required by Canadian WHMIS regulations. Irritancy is covered in Signs and Symptoms of Exposure in Section 4. There is no known human sensitization, toxicologically synergistic product, reproductive toxicity, mutagenicity, or teratogenicity associated with this product as a whole.

SAFETY-KLEEN PREMIUM SOLVENT
MATERIAL SAFETY DATA SHEET FOR U.S.A. AND CANADA

SECTION 5 -- FIRE AND EXPLOSION HAZARD DATA

**EMERGENCY RESPONSE
GUIDE NUMBER:**

27
Reference 1993 Emergency Response Guidebook (RSPA P 5800.6)

**FIRE AND
EXPLOSION HAZARDS:**

Decomposition and combustion products may be toxic. Heated containers may rupture, explode, or be thrown into the air. Vapors are heavier than air and may travel great distances to ignition source and flash back. Vapor explosion hazard indoors, outdoors, or in sewers. Run-off to sewer may create fire or explosion hazard. Not sensitive to mechanical impact. Material may be sensitive to static discharge, which could result in fire or explosion.

FIRE FIGHTING PROCEDURES:

Keep storage containers cool with water spray. Positive-pressure, self-contained breathing apparatus (SCBA) and structural firefighters' protective clothing will provide limited protection.

EXTINGUISHING MEDIA:

Carbon dioxide, foam, dry chemical, or water spray.

CONDITIONS OF FLAMMABILITY:

Heat, sparks, or flame.

FLASH POINT:

150°F (66°C) (approximately) Tag Closed Cup

AUTOIGNITION TEMPERATURE:

440°F (227°C) (minimum)

FLAMMABLE LIMITS IN AIR:

LOWER: 1.0 Vol. % **UPPER:** 9.3 Vol. %

**HAZARDOUS COMBUSTION
PRODUCTS:**

Burning may produce carbon monoxide.

SECTION 6 -- REACTIVITY DATA

STABILITY:

Stable under normal temperatures and pressures, and not reactive with water.

**INCOMPATIBILITY (MATERIALS AND
CONDITIONS TO AVOID):**

Avoid strong acids, bases, or oxidizing agents. Chlorine may cause a violent reaction. Avoid heat, sparks, or flame.

HAZARDOUS POLYMERIZATION:

Not known to occur under normal temperatures and pressures.

**HAZARDOUS DECOMPOSITION
PRODUCTS:**

None under normal temperatures and pressures.

SECTION 7 -- PREVENTIVE MEASURES

PRECAUTIONS FOR SAFE USE AND HANDLING

**HANDLING
PRECAUTIONS:**

Keep away from heat, sparks, or flame. Where explosive mixtures may be present, equipment safe for such locations should be used. When transferring material, metal containers, including tank cars and trucks, should be grounded and bonded. Avoid contact with eyes, skin, clothing, or shoes. Use in well ventilated area and avoid breathing vapor or mist.

**PERSONAL
HYGIENE:**

Use good personal hygiene. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco products. Clean contaminated clothing, shoes, and protective equipment before reuse. Discard contaminated clothing, shoes, or protective equipment if they cannot be thoroughly cleaned.

**SHIPPING AND
STORING
PRECAUTIONS:**

Keep container tightly closed when not in use and during transport. Do not pressurize, drill, cut, heat, weld, braze, grind, or expose containers to flame or other sources of ignition. Empty product containers may contain product residue. See Section 9 for Packing Group information.

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**SPILL
PROCEDURES:**

Remove all ignition sources. Stop leak if you can do it without risk. Wear protective equipment specified in Section 7, CONTROL MEASURES. Ventilate area and avoid breathing vapor or mist. Water spray may reduce vapor, but it may not prevent ignition in closed spaces. For large spills, isolate area and deny entry; dike far ahead of liquid spill for later disposal. Contain away from surface waters and sewers. If possible, contain as a liquid for possible re-refining or sorb with compatible sorbent material and shovel with a non-sparking tool into closable container for disposal. See 1993 *Emergency Response Guidebook* (RSPA P 5800.6) Guide Number 27 for more information.

**WASTE DISPOSAL
METHODS:**

Dispose in accordance with federal, state, provincial, and local regulations. Contact Safety-Kleen regarding recycling or proper disposal.

CONTROL MEASURES

**EYE
PROTECTION:**

Where there is likelihood of eye contact, wear chemical goggles; do NOT wear contact lenses.

**PROTECTIVE
GLOVES:**

Use Nitrile, Viton[®], or equivalent gloves to prevent contact with skin. Use of Butyl rubber, natural rubber, or equivalent gloves is not recommended.

**RESPIRATORY
PROTECTION:**

Use NIOSH/MSHA-approved respiratory protective equipment when concentration of vapor or mist exceeds applicable exposure limit. A self-contained breathing apparatus (SCBA) and full protective equipment are required for large spills or fire emergencies. Selection and use of respiratory protective equipment should be in accordance in the U.S.A. with OSHA General Industry Standard 29 CFR 1910.134 or in Canada with CSA Standard Z94.4-M1982.

**ENGINEERING
CONTROLS:**

Provide process enclosure or local ventilation needed to maintain concentration of vapor or mist below applicable exposure limits. Where explosive mixtures may be present, equipment safe for such locations should be used.

**OTHER PROTECTIVE
EQUIPMENT:**

Where spills and splashes are possible, wear appropriate solvent-resistant boots, apron, or other protective clothing. Clean water should be available in work areas for flushing the eyes and skin.

SECTION 8 -- PHYSICAL DATA

**PHYSICAL STATE,
APPEARANCE AND ODOR:**

Liquid, clear and colorless (water white), with characteristic hydrocarbon odor.

ODOR THRESHOLD:

30 ppm (based on Stoddard Solvent)

SPECIFIC GRAVITY:

0.78 to 0.82 (60°/60°F) (15.6°/15.6°C) (water = 1)

DENSITY:

6.5 to 6.8 lb/US gal (780 to 820 g/l)

VAPOR DENSITY:

5.3 to 6.2 (air = 1)

VAPOR PRESSURE:

0.4 to 1 mm Hg at 68°F (20°C)

BOILING POINT:

350° to 470°F (177° to 244°C)

FREEZING POINT:

less than -45°F (-43°C)

pH:

Not applicable.

**VOLATILE ORGANIC COMPOUNDS:
(S EPA DEFINITION)**

100 WT%; 6.5 to 6.8 lb/US gal; 780 to 820 g/l

EVAPORATION RATE:

less than 0.1 (butyl acetate = 1)

SOLUBILITY IN WATER:

Insoluble.

SAFETY-KLEEN PREMIUM SOLVENT
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**COEFFICIENT OF WATER/OIL
DISTRIBUTION:** less than 1

MOLECULAR WEIGHT: 155 to 180

SECTION 9 -- OTHER REGULATORY INFORMATION

TRANSPORTATION INFORMATION

DOT PROPER SHIPPING NAME: COMBUSTIBLE LIQUID, N.O.S. (PETROLEUM NAPHTHA)

DOT CLASS: Combustible Liquid

DOT ID NUMBER: NA1993 PG III

TDG CLASSIFICATION: Not regulated.

SARA TITLE III: Product does not contain toxic chemicals subject to the requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

Product poses the following physical and health hazards as defined in 40 CFR Part 370 and is subject to the requirements of sections 311 and 312 of Title III of the Superfund Amendments and Reauthorization Act of 1986:

Immediate (Acute) Health Hazard
Delayed (Chronic) Health Hazard
Fire Hazard

WHMIS CLASSIFICATION: B3, Flammable and Combustible Material, Combustible Liquids;
D2B, Poisonous and Infectious Material, Materials Causing Other Toxic Effects,
Toxic Material

TSCA: All of the components for this product are listed on, or are exempted from the requirement to be listed on, the TSCA Inventory.

CALIFORNIA: This product is not for sale or use in the State of California.

User assumes all risks incident to the use of this product. To the best of our knowledge, the information contained herein is accurate. However, Safety-Kleen assumes no liability whatsoever for the accuracy or completeness of the information contained herein. No representations or warranties, either expressed or implied, or merchantability, fitness for a particular purpose or of any other nature are made hereunder with respect to information or the product to which information refers. The data contained on this sheet apply to the material as supplied to the user.

MATERIAL SAFETY DATA SHEET

EASTMAN



Responsible Care®
A Public Commitment

100000068/F/USA

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1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: "EASTMAN" **EB Solvent**

Product Identification Number(s): SPC 25921

Manufacturer/Supplier: Eastman Chemical Company, Kingsport, Tennessee 37662

MSDS Prepared by: Eastman Product Safety and Stewardship, Eastman Chemical Company, Kingsport, TN 37662

For Emergency Health, Safety & Environmental Information, call 800-EASTMAN

For Emergency Transportation Information, call CHEMTREC at 800-424-9300 or call 800-EASTMAN

For Other Information, call your Eastman representative or the Eastman operator at 423-229-2000 (USA)

Chemical Name: 2-butoxyethanol

Synonym(s): EAN 902270; PM 00650-00; ethylene glycol monobutyl ether; 2-butoxyethanol

Molecular Formula: C₆H₁₄O₂

Molecular Weight: 118.18

Product Use: solvent

2. COMPOSITION/INFORMATION ON INGREDIENTS

Weight % - Component - (CAS Registry Number)

100 ethylene glycol monobutyl ether (000111-76-2)

3. HAZARDS IDENTIFICATION

WARNING!

HARMFUL IF INHALED, ABSORBED THROUGH SKIN, OR SWALLOWED

MAY CAUSE BLOOD DISORDERS BASED ON ANIMAL DATA

CAUSES SKIN AND EYE IRRITATION

PEROXIDE FORMER

COMBUSTIBLE LIQUID AND VAPOR

HMIS Hazard Ratings: Health - 2*, Flammability - 2, Chemical Reactivity 2.0

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NFPA Hazard Ratings: Health - 2, Flammability - 2, Instability - 0

NOTE: HMIS and NFPA ratings involve data and interpretations that may vary from company to company. They are intended only for rapid, general identification of the magnitude of the specific hazard. To deal adequately with the safe handling of this material, all the information contained in this MSDS must be considered.

4. FIRST-AID MEASURES

Inhalation: Move to fresh air. Treat symptomatically. Get medical attention.

Eyes: Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention.

Skin: Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Wash contaminated clothing before reuse. Destroy or thoroughly clean contaminated shoes.

Ingestion: Call a physician or poison control center immediately. Induce vomiting as directed by medical personnel. Never give anything by mouth to an unconscious person.

5. FIRE FIGHTING MEASURES

Extinguishing Media: water spray, dry chemical, carbon dioxide (CO2), alcohol foam

Special Fire-Fighting Procedures: Wear self-contained breathing apparatus and protective clothing. Use water spray to keep fire-exposed containers cool.

Hazardous Combustion Products: carbon dioxide, carbon monoxide

Unusual Fire and Explosion Hazards: Forms peroxides of unknown stability. Classified as combustible.

6. ACCIDENTAL RELEASE MEASURES

Eliminate all ignition sources. Absorb spill with vermiculite or other inert material, then place in a container for chemical waste.

For Large Spills: Flush spill area with water spray. Prevent runoff from entering drains, sewers, or streams.

7. HANDLING AND STORAGE

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Personal Precautionary Measures: Avoid contact with eyes, skin, and clothing. Avoid breathing vapor. Do not taste or swallow. Use only with adequate ventilation. Wash thoroughly after handling.

Prevention of Fire and Explosion: Keep away from heat and flame. Keep from contact with oxidizing materials. Minimize exposure to air. After opening, purge container with nitrogen before reclosing. If peroxide formation is suspected, do not open or move container. Do not distill to near dryness. Addition of water or appropriate reducing materials will lessen peroxide formation.

Storage: Keep container closed. Store away from heat and light.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits:

ACGIH Threshold Limit Value (TLV): 25 ppm TWA, skin

OSHA (USA) Permissible Exposure Limit (PEL, 1989 Table Z-1-A values or section-specific standards): 25 ppm TWA, skin

Ventilation: Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. Use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits.

Respiratory Protection: If engineering controls do not maintain airborne concentrations below recommended exposure limits, an approved respirator must be worn. Respirator type: mist, organic vapor. If respirators are used, a program should be instituted to assure compliance with OSHA Standard 63 FR 1152, January 8, 1998.

Eye Protection: Wear safety glasses with side shields (or goggles) and a face shield.

Skin Protection: Wear chemical-resistant gloves, boots, and protective clothing appropriate for the risk of exposure. Contact glove manufacturer for specific information.

Recommended Decontamination Facilities: eye bath, washing facilities, safety shower

9. PHYSICAL AND CHEMICAL PROPERTIES

- Physical Form: liquid
- Color: colorless
- Odor: slight
- Odor Threshold: 0.48 ppm

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- Specific Gravity at 20°C (68°F) (water = 1): 0.902
- Vapor Pressure at 20°C (68°F): 0.8 mbar (0.6 mm Hg)
- Vapor Density (Air = 1): 4.0
- Evaporation Rate (n-butyl acetate = 1): 0.1
- Boiling Point: 169°C (336°F)
- Melting Point: -75°C (-103°F)
- Viscosity at 20°C (68°F): 6.40 mPa.s or cP
- Solubility in Water at Ambient Temperature: complete
- pH: not applicable
- Octanol/Water Partition Coefficient: not available
- Flash Point (Tag closed cup): 62°C (143°F)
- Lower Flammable Limit at 93°C (199°F): 1.1 volume %
- Upper Flammable Limit at 135°C (275°F): 12.7 volume %
- Autoignition Temperature (ASTM D-2155): 238°C (460°F)
- Sensitivity to Mechanical Impact: insensitive at 100 kg-cm
- Sensitivity to Static Discharge: not available

10. STABILITY AND REACTIVITY

Stability: Stable; however, forms peroxides of unknown stability.

Incompatibility: Material can react violently with strong oxidizing agents.

Hazardous Polymerization: will not occur

11. TOXICOLOGICAL INFORMATION

Effects of Exposure:

General: May cause blood disorders based on animal data.

Inhalation: Harmful if inhaled.

Eyes: Causes irritation.

Skin: Harmful if absorbed through skin. Causes irritation.

Ingestion: Harmful if swallowed.

Acute Toxicity Data:

Oral LD-50 (rat): 1746 mg/kg

Oral LD-50 (mouse): 1519 mg/kg

Oral LD-50 (guinea pig): 1414 mg/kg

Inhalation LC-50 (mouse): 700 ppm/7 hour(s)

Inhalation LC-50 (female guinea pig): >633 ppm/1 hour(s) (highest concentration tested)

Inhalation LC-50 (male guinea pig): >691 ppm/1 hour(s) (highest concentration tested)

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Dermal LD-50 (rabbit): 435 mg/kg
Dermal LD-50 (guinea pig): >2000 mg/kg (only dose tested)
Skin irritation (guinea pig): strong
Skin irritation (rabbit): moderate
Repeated skin application (rabbit): slight irritation
Skin sensitization (human): none
Eye irritation (rabbit): moderate

Definitions for the following section(s): LOEL = lowest-observed-effect level,
NOAEL = no observed-adverse-effect level, NOEL = no-observed-effect level.

Subchronic Toxicity Data:

Inhalation study (9 days, rat): LOEL = 86 ppm (target organ effects: red blood cell); NOEL = 20 ppm

Inhalation study (3 months, rat): LOEL = 77 ppm (reduced body weight gain), (target organ effects: red blood cell); NOEL = 25 ppm

Dermal study (13 weeks, rabbit): NOEL = 150 mg/kg/day (highest dose tested)

Oral study (6 weeks, male rat): LOEL = 222 mg/kg/day (target organ effects: red blood cell), (target organ effects: liver); NOEL = not established

Developmental Toxicity Data:

Inhalation study (rat): NOEL for developmental toxicity = 200 ppm (highest concentration tested)

Inhalation study (rat): LOEL for embryo/fetotoxicity = 100 ppm; LOEL for maternal toxicity = 100 ppm (target organ effects: red blood cell); NOEL for embryo/fetotoxicity = 50 ppm; NOEL for maternal toxicity = 50 ppm; NOEL for teratogenicity = 200 ppm (highest concentration tested)

Inhalation study (rabbit): LOEL for embryo/fetotoxicity = 200 ppm (highest concentration tested); LOEL for maternal toxicity = 200 ppm; NOEL for embryo/fetotoxicity = 100 ppm; NOEL for maternal toxicity = 100 ppm; NOEL for teratogenicity = 200 ppm

Dermal study (rat): NOEL for developmental toxicity = 1.43-2.50 ml/kg/day

Dermal absorption rate (human, in vitro): 0.198 mg/cm²/hour

Metabolism data (male rat): metabolite(s): n-butoxyacetic acid

Mutagenicity/Genotoxicity Data:

Salmonella typhimurium assay (Ames test): negative (+/- activation)

Chromosomal aberration assay: negative (in vitro)

CHO/HGPRT assay: negative (+/- activation)

Mouse micronucleus assay: negative

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12. ECOLOGICAL INFORMATION

Introduction: This environmental effects summary is written to assist in addressing emergencies created by an accidental spill which might occur during the shipment of this material, and, in general, it is not meant to address discharges to sanitary sewers or publicly owned treatment works.

Data for this material have been used to estimate its environmental impact. It has the following properties: a high biochemical oxygen demand and a potential to cause oxygen depletion in aqueous systems, a low potential to affect aquatic organisms, a low potential to affect algal growth, a high potential to biodegrade (low persistence) with unacclimated microorganisms from activated sludge. After dilution with a large amount of water, followed by secondary waste treatment, this material is not expected to cause adverse environmental effects.

Oxygen Demand Data:

ThOD: 2.30 g oxygen/g

COD: 2.18 g oxygen/g

BOD-5 at 3 microliter(s)/l: 1.3 g oxygen/mL

BOD-20 at 3 microliter(s)/l: 1.8 g oxygen/mL

Acute Aquatic Effects Data:

24-h LC-50 (goldfish): 1650-1700 mg/L

24-h EC-50 (daphnid): 1850 mg/L

24-h LC-50 (daphnid): 1720 mg/L

48-h LC-50 (daphnid): 835 mg/L

96-h LC-50 (fathead minnow): 2137 mg/L

96-h LC-50 (bluegill sunfish): 1490 mg/L

168-h LC-50 (guppy): 983 ppm

Acute Algal Effects:

168-h EC-50 (*Selenastrum capricornutum*): >1000 mg/L

13. DISPOSAL CONSIDERATIONS

Discharge, treatment, or disposal may be subject to national, state, or local laws. Incinerate.

Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. TRANSPORT INFORMATION

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-
- > - DOT (USA) Status: quantities of 450 liters (119 gallons) or less are not regulated; the following requirements apply to larger quantities:
 - > - Class combustible liquid, packing group III
 - > - Air - International Civil Aviation Organization (ICAO)
 - > - ICAO Status: not regulated
 - > - Sea - International Maritime Dangerous Goods (IMDG)
 - > - IMDG Status: not regulated
-

15. REGULATORY INFORMATION

- This document has been prepared in accordance with the MSDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.
- OSHA Classification: hazardous
- California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986): material(s) known to the State to cause cancer: none known to Eastman
- California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986): material(s) known to the State to cause adverse reproductive effects: none known to Eastman
- This document has been prepared in accordance with the MSDS requirements of the WHMIS Controlled Products Regulation.
- WHMIS (Canada) Status: controlled
- WHMIS (Canada) Hazard Classification: B/3, D/1/B
- Carcinogenicity Classification (components present at 0.1% or more):
 - International Agency for Research on Cancer (IARC): not listed
 - American Conference of Governmental Industrial Hygienists (ACGIH): not listed
 - National Toxicology Program (NTP): not listed
 - Occupational Safety and Health Administration (OSHA): not listed
- Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372: 2-butoxyethanol (glycol ether category)
- SARA (U.S.A.) Sections 311 and 312 hazard classification(s): delayed (chronic) health hazard, immediate (acute) health hazard, fire hazard
- US Toxic Substances Control Act (TSCA): This product is listed on the TSCA inventory. Any impurities present in this product are exempt from listing.
- Canadian Environmental Protection Act (CEPA) and Domestic Substances List (DSL): This product is listed on the DSL. Any impurities present in this product are exempt from listing.
- European Inventory of Existing Commercial Chemical Substances (EINECS): This product is listed on EINECS. EINECS Number: 2039050

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-
- Australian Inventory of Chemical Substances (AICS) and National Industrial Chemicals Notification and Assessment Scheme (NICNAS): This product is listed on AICS or otherwise complies with NICNAS.
 - Japanese Handbook of Existing and New Chemical Substances: This product is listed in the Handbook or has been approved in Japan by new substance notification. MITI Number: 2-407
 - Korean Toxic Substances Control Act: This product is listed on the Korean inventory or otherwise complies with the Korean Toxic Substances Control Act. ECL Number: KE-04134
-

16. OTHER INFORMATION

Label Statements:

WARNING!

HARMFUL IF INHALED, ABSORBED THROUGH SKIN, OR SWALLOWED
MAY CAUSE BLOOD DISORDERS BASED ON ANIMAL DATA
CAUSES SKIN AND EYE IRRITATION
PEROXIDE FORMER
COMBUSTIBLE LIQUID AND VAPOR

Avoid breathing vapor.
Avoid contact with eyes, skin, and clothing.
Do not taste or swallow.
Do not distill to near dryness.
Keep material from heat, light, and flame.
Keep container closed.
Use only with adequate ventilation.
Wash thoroughly after handling.

FIRST AID: If inhaled, move to fresh air. Treat symptomatically. Get medical attention. In case of contact, immediately flush eyes and skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. If easy to do, remove contact lenses. Get medical attention. Wash clothing before reuse. Destroy or thoroughly clean contaminated shoes. If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately.

IN CASE OF FIRE: Use water spray, dry chemical, carbon dioxide (CO₂), alcohol foam. Use water spray to keep fire-exposed containers cool.

IN CASE OF SPILL: Eliminate all ignition sources. Flush spill area with water spray. Prevent runoff from entering drains, sewers, and streams.

Since emptied containers retain product residue, follow label warnings even after container is emptied.

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CAUTION: FOR MANUFACTURING, PROCESSING OR REPACKING BY TRAINED PERSONNEL

The information contained herein is based on current knowledge and experience; no responsibility is accepted that the information is sufficient or correct in all cases. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use and disposal of these materials and the safety and health of employees and customers and the protection of the environment.

The symbol ">" in the left margin denotes a revision in this section.

MATERIAL SAFETY DATA SHEET

MSDS NUMBER: MSDS-957L

ISSUE DATE: 12/01/95

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1. PRODUCT IDENTIFICATION

Product Name

AquaWorks™ Cleaning Solution

Emergency Phone:

1-609-683-5900 (U.S.A.)

Medical Emergency Phone:

1-800-228-5635

Ext. 007 (U.S.A.)

2. COMPOSITION/INFORMATION ON INGREDIENTS

- Not hazardous under the OSHA Hazard Communication Standard 29 CFR 1910.1200.
- Contains no components that are reported to be carcinogenic by any reference source including IARC, OSHA, NTP and EPA.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Hazy, whitish-gray liquid.
Slight/mild odor.
Not a primary skin irritant.
May cause mild eye irritation.
Not a fire hazard.
No other significant health or environmental effects known or anticipated.

HMIS Rating

Health	0
Fire	0
Reactivity	0

Potential Health Effects

EYE: May be mildly irritating to eyes.

SKIN CONTACT: May cause slight irritation from continually repeated, prolonged, or occluded contact.

INGESTION: Considered non-toxic. Swallowing a small amount (< 1 ounce) is not likely to have an adverse effect. Ingestion of a large quantity (more than an ounce) may cause abdominal discomfort and may irritate the alimentary mucosa.

INHALATION: Considered non-toxic. Prolonged inhaling of mist may aggravate pre-existing upper respiratory disorders and cause irritation to the nose, throat and lungs.

SUBCHRONIC EFFECTS/CARCINOGENICITY: None known. The ingredients in this product are not listed as carcinogens or potential carcinogens by NTP Annual Report, IARC Group I or II, OSHA 29 CFR 1910 Subpart Z, and ACGIH Appendix A.

MATERIAL SAFETY DATA SHEET

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4. FIRST AID MEASURES

SKIN: Remove contaminated clothing. Wash exposed areas with soap and water.

EYES: Immediately flush eyes with clean, flowing water, low pressure and luke warm if possible, occasionally lifting upper and lower eyelids. Make sure contact lenses are removed. Seek medical attention if irritation develops.

INHALATION: Move from area of exposure. Treat symptomatically. Seek medical attention if irritation develops or if person has difficulty breathing.

INGESTION: If large amounts are ingested, do not induce vomiting. If person is conscious, give two glasses of water to drink. Do not attempt to give anything orally to an unconscious person. Seek medical attention.

NOTE TO PHYSICIAN: Ingestion of large amounts may cause systemic alkalosis. Treatment based on judgement of physician in response to reactions of patient.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

FLASHPOINT: Not Applicable

METHOD USED: Not Applicable

FLAMMABLE LIMITS

LFL: Not Applicable

UFL: Not Applicable

EXTINGUISHING MEDIA: Use extinguishing media for surrounding fire.

FIRE-FIGHTING INSTRUCTIONS: Carbon dioxide may be generated by thermal decomposition or exposure to acids. Thermal decomposition may also yield carbon monoxide and oxides of sulfur and nitrogen. Wear a self-contained breathing apparatus (SCBA) and full protective equipment.

UNUSUAL FIRE AND EXPLOSION HAZARDS: None known.

6. ACCIDENTAL RELEASE MEASURES

Will create slippery conditions if spilled. Close off area to traffic. Exercise proper cautions during clean-up. Large spills should be contained. Absorb using clay or commercial absorbent and dispose of in suitable waste containers as regulations permit (See Section 12). Flush residues to sewer or waste water system. Prevent eye and skin contact by wearing appropriate protective equipment (See Section 8). Be sure cleaned area is dry or slip-free before reopening to traffic.

7. HANDLING AND STORAGE

Store in original containers away from incompatible materials (acids). Keep containers tightly closed. Prevent skin and eye contact during handling by wearing appropriate protective equipment (See Section 8).

MATERIAL SAFETY DATA SHEET

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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

RESPIRATORY PROTECTION: None required under normal use conditions. If mists are generated, wear a NIOSH approved respirator.

PROTECTIVE GLOVES: It is good personal and industrial hygiene to prevent skin contact with the solution. Impermeable gloves are recommended to prevent skin contact during use or for cleaning up spills.

EYE PROTECTION: Chemical splash goggles are recommended when handling or working with solution, or for cleaning up spills.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: As part of normal personal hygiene, wear an impermeable apron where splashing of solution cannot be avoided.

VENTILATION: No special requirements unless mists are generated, then use local exhaust ventilation.

PROTECTIVE WORK/HYGIENIC PRACTICES: No special requirements with respect to chemical exposure other than those noted above. Specific requirements with respect to equipment and specific applications are the responsibility of the user.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Hazy whitish-gray liquid

ODOR: Slight/mild

PHYSICAL STATE: Liquid

pH AS IS: 10.8

VAPOR PRESSURE: N/A

BOILING POINT: 100-110°C

FREEZING POINT: -10°C - 0°C

SOLUBILITY IN WATER: Complete

SPECIFIC GRAVITY (Water = 1): Approximately 1.0 @ 25°C

APPARENT DENSITY: 8.4 lbs/gal @ 25°C

SURFACE TENSION: 35 dynes

VISCOSITY: < 100 cp

% VOLATILE: Approximately 98% as water

VOLATILE ORGANIC COMPOUNDS: None with vp ≥ 0.1 mm Hg.

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable.

CONDITIONS TO AVOID: Acids

INCOMPATIBILITY WITH OTHER MATERIALS: Reacts with acids to release carbon dioxide.

HAZARDOUS DECOMPOSITION PRODUCTS: May produce carbon monoxide, carbon dioxide, and fumes of SO_x and NO_x.

HAZARDOUS POLYMERIZATION: Will not occur.

MATERIAL SAFETY DATA SHEET

MSDS NUMBER: MSDS-957L

ISSUE DATE: 12/01/95

PAGE 4 OF

11. TOXICOLOGICAL INFORMATION

EYE EFFECTS: No specific data available. Tests on concentrated versions of similar formulations indicate that mild to moderate irritation is possible with those concentrates. These effects are minimized and reversible with immediate treatment with no corneal involvement or visual impairment expected. The 10% bath solution can be expected to have a minimal to mild effect if not treated.

SKIN EFFECTS: No specific data available. Not a primary skin irritant based on testing of a concentrated version of a similar formulation. Bath solution may be irritating to humans under conditions of repeated or prolonged contact. Any irritant effect would be expected to be minimal and fully reversible.

ACUTE ORAL EFFECTS: No specific data available. Concentrated versions of similar formulations have been shown to be non-toxic with an $LD_{50} > 5000$ mg/kg.

INHALATION EFFECTS: No data available. May cause irritation to upper respiratory tract if inhaled as mist. Irritation would be expected to be transient with no permanent damage.

12. DISPOSAL CONSIDERATIONS

Dispose of spilled or waste product and other large amounts in accordance with all local, state and federal environmental regulations. State and local regulations may differ from Federal. Be sure to consult with appropriate agencies for specific rules.

13. TRANSPORTATION INFORMATION

D.O.T. SHIPPING NAME: Not regulated

TECHNICAL SHIPPING NAME: Aqueous Cleaning Solution

D.O.T. HAZARD CLASS: None

U.N./N.A. NUMBER: None

HAZARDOUS SUBSTANCE/RQ: None

D.O.T. LABEL: None

D.O.T. PLACARD: None

14. REGULATORY INFORMATION

OSHA

This product has been assessed as nonhazardous under the criteria of the OSHA Hazard Communication Standard (29 CFR 1910.1200).

TSCA

The ingredients in this product are reported in the U.S. EPA TSCA Inventory.

15. MSDS REVISION SUMMARY

SUPERSEDES DATE: NEW

This Product Safety Data Sheet is offered solely for your information, consideration and investigation. Church & Dwight Co., Inc. provides no warranties, either express or implied, and assumes no responsibility for the accuracy or completeness of data contained herein. Church & Dwight Co., Inc. urges persons receiving this information to make their own determination as to the information suitability for their particular application.



PRODUCT INFORMATION

JET LUME - ALUMINUM SAFE SPRAY WASH COMPOUND

GENERAL DESCRIPTION: JET-LUME is a heavy duty spray wash compound formulated to be safe on all metals including aluminum. JET LUME will remove oil, grease, carbon soils and varnish from aluminum parts. JET LUME contains an effective defoamer to counter the high agitation found in jet spray washers.

<u>PROPERTIES</u>	Form.....Granular Powder
	Color.....White
	pH (1%).....12.0 - 12.30
	Odor.....Mild

USE DIRECTIONS: Dissolve 4 to 8 oz. of JET LUME per gallon of water. Best results are achieved when wash temperatures are 165° to 180 ° F.

CAUTION: Contains Sodium Metasilicate. Can cause burns to eyes, skin and mucous membranes. For skin or eye contact, flush area thoroughly with water for at least 15 minutes. See a physician. If swallowed, do not induce vomiting. Give large amounts of milk or water and get immediate medical attention.

KEEP OUT OF REACH OF CHILDREN.

<u>PACKAGING:</u>	450 lb. drum
	150 lb. keg

MT. HOOD CHEMICAL CORPORATION

4444 N.W. YEON AVENUE, PORTLAND, OREGON 97210
(503) 227-3505 FAX (503) 225-9143
Call Toll Free (800) 547-2594

MATERIAL SAFETY DATA SHEET
MT. HOOD CHEMICAL CORPORATION

HOOD CHEMICAL CORPORATION
4444 N.W. Yeon Avenue
Portland, Oregon 97210
Emergency Phone: 503-227-3505

N/A = NOT APPLICABLE
NA = NOT AVAILABLE

PRODUCT NAME: JET LUME

PREPARED BY: K. Woods

DATE: July 12, 1991

CHEMICAL FAMILY: Alkaline Detergent Mixture FORMULA: Proprietary

HAZARDOUS INGREDIENTS (CAS #):	%	EXPOSURE LIMITS, ppm:	ACGIH TLV	OSHA-PEL
Sodium metasilicate (6834-92-0)	Less than 50%		N/A	N/A

CARCINOGENIC INGREDIENTS: Contains no known or suspected carcinogens.

PHYSICAL PROPERTIES:

Boiling Point: N/A	% Volatiles: N/A
Solubility in Water: Appreciable	% Volatile Organic Content (VOC): 0
Specific Gravity - Liquid (H ₂ O = 1): N/A	Vapor Pressure: N/A
Odor and Appearance: White granules; mild scent	Vapor Density (Air = 1): N/A

FIRE AND EXPLOSION DATA:

Flash Point: None	Flammability Limits: N/A
Extinguishing Media: Water, CO ₂ , foam, dry chemical	
Special Firefighting Procedures: None	
Unusual Hazards: None	

HEALTH EFFECTS:

Effects of overexposure: May cause eye or skin irritation. Ingestion may cause nausea or diarrhea. Ingestion may also cause irritation or burns to mouth, throat, and esophagus. Inhalation of dust may cause irritation to the respiratory tract.

Chronic effects of overexposure: None known or expected.

Medical conditions that may be aggravated by exposure: None known or expected.

Primary routes of entry: Ingestion, skin contact, inhalation of dust.

Emergency Number (800)457-2022 or (510)233-3737



Material Safety Data Sheet

CHEVRON ATF DEXRON

CPS226502

Page 1 of 7

PRIESTLEY OIL & CHEMICAL 3746534
CO., INC.
P O BOX 12570
PORTLAND, OR 97212

MATERIAL ORDERED FOR:
BULK LUBE OIL PICK-UP WB
FOB WILLERIDGE
PORTLAND, OR 97210

Print Date: October 13, 1992

This Material Safety Data Sheet contains environmental, health and toxicology information for your employees. Please make sure this information is given to them. It also contains information to help you meet community right-to-know/emergency response reporting requirements under SARA Title III and many other laws. If you resell this product, this MSDS must be given to the buyer or the information incorporated in your MSDS. Discard any previous edition of this MSDS.

Revised to reflect name change from "CHEVRON Automatic Transmission Fluid (DEXRON)" to "CHEVRON ATF DEXRON".

1. PRODUCT IDENTIFICATION

CHEVRON ATF DEXRON

PRODUCT NUMBER(S): CPS226502
PRODUCT INFORMATION: (800)582-3835

UPDATED
2-95

Revision Number: 18 Revision Date: 02/08/92 MSDS Number: 000021
NDA - No Data Available NA - Not Applicable

Prepared According to the OSHA Hazard Communication
Standard (29 CFR 1910.1200) by the Chevron Environmental
Health Center, Inc., P.O. Box 4054, Richmond, CA 94804.

2. FIRST AID - EMERGENCY NUMBER (800)457-2022 OR (510)233-3737

EYE CONTACT:

No first aid procedures are required. However, as a precaution flush eyes with fresh water for 15 minutes. Remove contact lenses if worn.

SKIN CONTACT:

No first aid procedures are required. As a precaution, wash skin thoroughly with soap and water. Remove and wash contaminated clothing.

INHALATION:

Since this material is not expected to be an immediate inhalation problem, no first aid procedures are required.

INGESTION:

If swallowed, give water or milk to drink and telephone for medical advice. Consult medical personnel before inducing vomiting. If medical advice cannot be obtained, then take the person and product container to the nearest medical emergency treatment center or hospital.

3. IMMEDIATE HEALTH EFFECTS - (ALSO SEE SECTIONS 11 & 12)

EYE CONTACT:

This substance is not expected to cause prolonged or significant eye irritation. This hazard evaluation is based on the data from similar materials.

SKIN IRRITATION:

This substance is not expected to cause prolonged or significant skin irritation. This hazard evaluation is based on data from similar materials.

DERMAL TOXICITY:

The systemic toxicity of this substance has not been determined. However, it should be practically non-toxic to internal organs if it gets on the skin. This hazard evaluation is based on data from similar materials.

RESPIRATORY/INHALATION:

The systemic toxicity of this substance has not been determined. However, it should be practically non-toxic to internal organs if inhaled. This hazard evaluation is based on data from similar materials.

INGESTION:

The systemic toxicity of this substance has not been determined. However, it should be practically non-toxic to internal organs if swallowed. This hazard evaluation is based on data from similar materials.

4. PROTECTIVE EQUIPMENT

EYE PROTECTION:

No special eye protection is usually necessary.

SKIN PROTECTION:

No special skin protection is usually necessary. Avoid prolonged or frequently repeated skin contact with this material. Skin contact can be

minimized by wearing protective clothing.

RESPIRATORY PROTECTION:

No special respiratory protection is normally required. However, if operating conditions create airborne concentrations which exceed the recommended exposure standards, the use of an approved respirator is required.

VENTILATION:

Use adequate ventilation to keep the airborne concentrations of this material below the recommended exposure standard.

5. FIRE PROTECTION

FLASH POINT: (COC) 160C (320F) Min.

AUTOIGNITION: NDA

FLAMMABILITY LIMITS (% by volume in air): Lower: NA Upper: NA

EXTINGUISHING MEDIA:

CO2, Dry Chemical, Alcohol Foam and Water Fog.

NEPA RATINGS: Health 0; Flammability 1; Reactivity 0; Special NDA;

(Least-0, Slight-1, Moderate-2, High-3, Extreme-4). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association or, if applicable, the National Paint and Coating Association, and do not necessarily reflect the hazard evaluation of the Chevron Environmental Health Center. Read the entire document and label before using this product.

FIRE FIGHTING PROCEDURES:

For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

COMBUSTION PRODUCTS:

Normal combustion forms carbon dioxide, water vapor and may produce oxides of sulfur, nitrogen and phosphorous. Incomplete combustion can produce carbon monoxide.

6. STORAGE, HANDLING, AND REACTIVITY

HAZARDOUS DECOMPOSITION PRODUCTS:

NDA.

STABILITY:

Stable.

HAZARDOUS POLYMERIZATION:

Polymerization will not occur.

INCOMPATIBILITY:

May react with strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

SPECIAL PRECAUTIONS:

DO NOT weld, heat or drill container. Residue may ignite with explosive violence if heated sufficiently. CAUTION! Do not use pressure to empty drum or drum may rupture with explosive force.

7. PHYSICAL PROPERTIES

SOLUBILITY: Soluble in hydrocarbon solvents; insoluble in water.

APPEARANCE: Red liquid.

BOILING POINT: NDA

MELTING POINT: NA

EVAPORATION: NA

SPECIFIC GRAVITY: 0.89 @ 15.6/15.6C

VAPOR PRESSURE: NA

PERCENT VOLATILE (VOLUME %): NA

VAPOR DENSITY (AIR=1): NA

VISCOSITY: 35.3 cst @ 40c

8. ENVIRONMENTAL CONCERNS, SPILL RESPONSE AND DISPOSAL

CHEMTREC EMERGENCY PHONE NUMBER: (800) 424-9300 (24 hour).

SPILL/LEAK PRECAUTIONS:

This material is not expected to present any environmental problems other than those associated with oil spills.

Stop the source of the leak or release. Clean up releases as soon as possible, observing precautions in Protective Equipment. Contain liquid to prevent further contamination of soil, surface water or groundwater. Clean up small spills using appropriate techniques such as sorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Follow prescribed procedures for reporting and responding to larger releases.

DISPOSAL METHODS:

Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations. Contact local environmental or health authorities for approved disposal of this material.

9. EXPOSURE STANDARDS, REGULATORY LIMITS AND COMPOSITION

COMPOSITION COMMENT:

All the components of this material are on the Toxic Substances Control Act Chemical Substances Inventory.

This product fits the ACGIH definition for mineral oil mist. The ACGIH TLV is 5 mg/m³, the OSHA PEL is 5 mg/m³.

The percent compositions are given to allow for the various ranges of the components present in the whole product and may not equal 100%.

PERCENT/CAS# COMPONENT/REGULATORY LIMITS

Revision Number: 18

Revision Date: 02/08/92

MSDS Number: 000021

NDA - No Data Available

NA - Not Applicable

100.0 % CHEVRON ATF DEXRON

CONTAINING

> 85.0 % LUBRICATING BASE OIL CONTAINING ONE OR MORE OF THE FOLLOWING

CAS64742525 DISTILLATES, HYDROTREATED HEAVY NAPHTHENIC
5 mg/m3 mist ACGIH TLV
10mg/m3 mist ACGIH STEL
5mg/m3 mist OSHA TWA

CAS64742536 DISTILLATES, HYDROTREATED LIGHT NAPHTHENIC
5mg/m3 mist ACGIH TLV
10mg/m3 mist ACGIH STEL
5mg/m3 mist OSHA TWA

CAS64742547 DISTILLATES, HYDROTREATED HEAVY PARAFFINIC
5mg/3 mist ACGIH TLV
10mg/m3 mist ACGIH STEL
5mg/m3 mist OSHA TWA

CAS64742650 DISTILLATES, SOLVENT DEWAXED HEAVY PARAFFINIC
5 mg/m3 mist ACGIH TLV
10 mg/m3 mist ACGIH STEL
5 mg/m3 mist OSHA TWA

< 15.0 % ADDITIVES

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	TPQ - Threshold Planning Quantity
RQ - Reportable Quantity	CPS - CUSA Product Code
CC - Chevron Chemical Company	CAS - Chemical Abstract Service Number

10. REGULATORY INFORMATION

DOT SHIPPING NAME: NOT DESIGNATED AS A HAZARDOUS MATERIAL BY THE
FEDERAL DOT

DOT HAZARD CLASS: NOT APPLICABLE

DOT IDENTIFICATION NUMBER: NOT APPLICABLE

SARA 311 CATEGORIES:

1. Immediate (Acute) Health Effects; NO
2. Delayed (Chronic) Health Effects; NO
3. Fire Hazard; NO
4. Sudden Release of Pressure Hazard; NO
5. Reactivity Hazard; NO

The following components of this material are found on the regulatory
lists indicated by the number below the component name:

DISTILLATES, HYDROTREATED HEAVY NAPHTHENIC
is found on lists: 14,15,17,
DISTILLATES, HYDROTREATED LIGHT NAPHTHENIC

Revision Number: 18 Revision Date: 02/08/92 MSDS Number: 000021
NDA - No Data Available NA - Not Applicable

is found on lists: 14,15,17,
DISTILLATES, HYDROTREATED HEAVY PARAFFINIC
is found on lists: 14,15,17,
DISTILLATES, SOLVENT DEWAXED HEAVY PARAFFINIC
is found on lists: 14,15,17,

REGULATORY LISTS SEARCHED:

01=SARA 313	02=MASS RTK	03=NTP Carcinogen
04=CA Prop. 65	05=MI 406	06=IARC Group 1
07=IARC Group 2A	08=IARC Group 2B	09=SARA 302/304
10=PA RTK	11=NJ RTK	12=CERCLA 302.4
13=MN RTK	14=ACGIH TLV	15=ACGIH STEL
16=ACGIH Calculated TLV	17=OSHA TWA	18=OSHA STEL
19=Chevron TLV	20=EPA Carcinogen	21=TSCA Sect 4(e)
22=TSCA Sect 5(a)(e)(f)	23=TSCA Sect 6	24=TSCA Sect 12(b)
25=TSCA Sect 8(a)	26=TSCA Sect 8(d)	28=Canadian WHMIS
29=OSHA CEILING		

11. PRODUCT TOXICOLOGY DATA

EYE IRRITATION:

No product toxicology data available. The hazard evaluation was based on data from similar materials.

SKIN IRRITATION:

No product toxicology data available. The hazard evaluation was based on data from similar materials.

DERMAL TOXICITY:

No product toxicology data available. The hazard evaluation was based on data from similar materials.

RESPIRATORY/INHALATION:

No product toxicology data available. The hazard evaluation was based on data from similar materials.

INGESTION:

No product toxicology data available. The hazard evaluation was based on data from similar materials.

12. ADDITIONAL HEALTH DATA

ADDITIONAL HEALTH DATA COMMENT:

This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B).

Revision Number: 18

Revision Date: 02/08/92

MSDS Number: 000021

NDA - No Data Available

NA - Not Applicable

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modification of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

UPDATED 10-5-95

Emergency Number (800)457-2022 or (510)233-3737



Material Safety Data Sheet

CHEVRON DELO Heavy Duty Motor Oil SAE 30

CPS238155

Page 1 of 7

PRIESTLEY OIL & CHEMICAL 3907475
CO., INC.
P O BOX 12570
PORTLAND, OR 97212

MATERIAL ORDERED FOR:
PACKAGE PICK-UP W.B.
FOB WILLBRIDGE
PORTLAND, OR 97210

Print Date: December 15, 1992

This Material Safety Data Sheet contains environmental, health and toxicology information for your employees. Please make sure this information is given to them. It also contains information to help you meet community right-to-know/emergency response reporting requirements under SARA Title III and many other laws. If you resell this product, this MSDS must be given to the buyer or the information incorporated in your MSDS. Discard any previous edition of this MSDS.

Revised to update Sections 9 (Composition Comment) and 10 (DOT Information).

1. PRODUCT IDENTIFICATION

CHEVRON DELO Heavy Duty Motor Oil SAE 30

- A HAZARD WARNING IS NOT REQUIRED FOR THIS PRODUCT UNDER
OSHA HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200)

PRODUCT NUMBER(S): CPS238155
PRODUCT INFORMATION: (800)582-3835

Revision Number: 1 Revision Date: 12/27/90 MSDS Number: 004457
NDA - No Data Available NA - Not Applicable

Prepared According to the OSHA Hazard Communication
Standard (29 CFR 1910.1200) by the Chevron Environmental
Health Center, Inc., P.O. Box 4054, Richmond, CA 94804.

X-DOS051 106-86

2. FIRST AID - EMERGENCY NUMBER (800)457-2022 OR (510)233-3737

EYE CONTACT:

No first aid procedures are required. However, as a precaution flush eyes with fresh water for 15 minutes. Remove contact lenses if worn.

SKIN CONTACT:

No first aid procedures are required. As a precaution, wash skin thoroughly with soap and water. Remove and wash contaminated clothing.

INHALATION:

Since this material is not expected to be an immediate inhalation problem, no first aid procedures are required.

INGESTION:

If swallowed, give water or milk to drink and telephone for medical advice. Consult medical personnel before inducing vomiting. If medical advice cannot be obtained, then take the person and product container to the nearest medical emergency treatment center or hospital.

3. IMMEDIATE HEALTH EFFECTS - (ALSO SEE SECTIONS 11 & 12)

EYE CONTACT:

This substance is not expected to cause prolonged or significant eye irritation. This hazard evaluation is based on the data from similar materials.

SKIN IRRITATION:

This substance is not expected to cause prolonged or significant skin irritation. This hazard evaluation is based on data from similar materials.

DERMAL TOXICITY:

The systemic toxicity of this substance has not been determined. However, it should be practically non-toxic to internal organs if it gets on the skin. This hazard evaluation is based on data from similar materials.

RESPIRATORY/INHALATION:

The systemic toxicity of this substance has not been determined. However, it should be practically non-toxic to internal organs if inhaled. This hazard evaluation is based on data from similar materials.

INGESTION:

The systemic toxicity of this substance has not been determined. However, it should be practically non-toxic to internal organs if swallowed. This hazard evaluation is based on data from similar materials.

4. PROTECTIVE EQUIPMENT

EYE PROTECTION:

No special eye protection is usually necessary.

SKIN PROTECTION:

No special skin protection is usually necessary. Avoid prolonged or frequently repeated skin contact with this material. Skin contact can be

Revision Number: 1

Revision Date: 12/27/90

MSDS Number: 004457

NDA - No Data Available

NA - Not Applicable

minimized by wearing protective clothing.

RESPIRATORY PROTECTION:

No special respiratory protection is normally required. However, if operating conditions create airborne concentrations which exceed the recommended exposure standards, the use of an approved respirator is required.

VENTILATION:

Use adequate ventilation to keep the airborne concentrations of this material below the recommended exposure standard.

5. FIRE PROTECTION

FLASH POINT: (COC) 419F (210C) Min.

AUTOIGNITION: NDA

FLAMMABILITY LIMITS (% by volume in air): Lower: NA Upper: NA

EXTINGUISHING MEDIA:

CO2, Dry Chemical, Foam and Water Fog.

NFPA RATINGS: Health 0; Flammability 1; Reactivity 0; Special NDA;

HMIS RATINGS: Health 0; Flammability 1; Reactivity 0; Other NDA;

(Least-0, Slight-1, Moderate-2, High-3, Extreme-4). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association or, if applicable, the National Paint and Coating Association, and do not necessarily reflect the hazard evaluation of the Chevron Environmental Health Center. Read the entire document and label before using this product.

FIRE FIGHTING PROCEDURES:

For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

COMBUSTION PRODUCTS:

Normal combustion forms carbon dioxide, water vapor and may produce oxides of sulfur, nitrogen and phosphorous. Incomplete combustion can produce carbon monoxide.

6. STORAGE, HANDLING, AND REACTIVITY

HAZARDOUS DECOMPOSITION PRODUCTS:

NDA.

STABILITY:

Stable.

HAZARDOUS POLYMERIZATION:

Polymerization will not occur.

INCOMPATIBILITY:

May react with strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

SPECIAL PRECAUTIONS:

CAUTION! Do not use pressure to empty drum or explosion may result. DO NOT weld, heat or drill container. Residue may ignite with explosive violence if heated sufficiently.

Revision Number: 1

Revision Date: 12/27/90

MSDS Number: 004457

NDA - No Data Available

NA - Not Applicable

7. PHYSICAL PROPERTIES

SOLUBILITY: Soluble in hydrocarbon solvents; insoluble in water.

APPEARANCE: Dark brown liquid.

BOILING POINT: NA

MELTING POINT: NA

EVAPORATION: NA

SPECIFIC GRAVITY: 0.88 @ 15.6/15.6C

VAPOR PRESSURE: NA

PERCENT VOLATILE (VOLUME %): NA

VAPOR DENSITY (AIR=1): NA

VISCOSITY: 10.6 cSt @ 100C (Min.)

8. ENVIRONMENTAL CONCERNS, SPILL RESPONSE AND DISPOSAL

CHEMTREC EMERGENCY PHONE NUMBER: (800) 424-9300 (24 hour).

SPILL/LEAK PRECAUTIONS:

This material is not expected to present any environmental problems other than those associated with oil spills.

Stop the source of the leak or release. Clean up releases as soon as possible. Contain liquid to prevent further contamination of soil, surface water or groundwater. Clean up small spills using appropriate techniques such as sorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Follow prescribed procedures for reporting and responding to larger releases.

DISPOSAL METHODS:

Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations. Contact local environmental or health authorities for approved disposal of this material.

9. EXPOSURE STANDARDS, REGULATORY LIMITS AND COMPOSITION

COMPOSITION COMMENT:

All the components of this material are on the Toxic Substances Control Act Chemical Substances Inventory.

This product fits the ACGIH definition for mineral oil mist. The ACGIH TLV is 5 mg/m³, the OSHA PEL is 5 mg/m³.

The percent compositions are given to allow for the various ranges of the components present in the whole product and may not equal 100%.

PERCENT/CAS# COMPONENT/REGULATORY LIMITS

Revision Number: 1

Revision Date: 12/27/90

MSDS Number: 004457

NDA - No Data Available

NA - Not Applicable

100.0 % CHEVRON DELO Heavy Duty Motor Oil SAE 30

CONTAINING

> 80.0 % LUBRICATING BASE OIL

The BASE OIL may be a mixture of any of the following: CAS 64741884, CAS 64741895, CAS 64741964, CAS 64741975, CAS 64742014, CAS 64742525, CAS 64742536, CAS 64742547, CAS 64742627, CAS 64742650, CAS 72623837.

< 20.0 % ADDITIVES INCLUDING THE FOLLOWING

< 2.0 % BUTYL BENZYL PHTHALATE

CAS85687 A toxic chemical subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.
CERCLA 302.4 RQ=100 POUNDS

< 1.5 % ZINC ALKYL DITHIOPHOSPHATE

CAS68649423 A toxic chemical subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	TPQ - Threshold Planning Quantity
RQ - Reportable Quantity	CPS - CUSA Product Code
CC - Chevron Chemical Company	CAS - Chemical Abstract Service Number

10. REGULATORY INFORMATION

DOT SHIPPING NAME: NOT DESIGNATED AS A HAZARDOUS MATERIAL BY THE
FEDERAL DOT

DOT HAZARD CLASS: NOT APPLICABLE

DOT IDENTIFICATION NUMBER: NOT APPLICABLE

SARA 311 CATEGORIES:

1. Immediate (Acute) Health Effects; NO
2. Delayed (Chronic) Health Effects; NO
3. Fire Hazard; NO
4. Sudden Release of Pressure Hazard; NO
5. Reactivity Hazard; NO

The following components of this material are found on the regulatory lists indicated by the number below the component name:

ZINC ALKYL DITHIOPHOSPHATE

is found on lists: 01,10,11,

BUTYL BENZYL PHTHALATE

is found on lists: 01,10,11,12,26,28,

REGULATORY LISTS SEARCHED:

Revision Number: 1	Revision Date: 12/27/90	MSDS Number: 004457
NDA - No Data Available	NA - Not Applicable	

01=SARA 313	02=MASS RTK	03=NTP Carcinogen
04=CA Prop. 65	05=MI 406	06=IARC Group 1
07=IARC Group 2A	08=IARC Group 2B	09=SARA 302/304
10=PA RTK	11=NJ RTK	12=CERCLA 302.4
13=MN RTK	14=ACGIH TLV	15=ACGIH STEL
16=ACGIH Calculated TLV	17=OSHA TWA	18=OSHA STEL
19=Chevron TLV	20=EPA Carcinogen	21=TSCA Sect 4(e)
22=TSCA Sect 5(a)(e)(f)	23=TSCA Sect 6	24=TSCA Sect 12(b)
25=TSCA Sect 8(a)	26=TSCA Sect 8(d)	27=TSCA Sect 8(e)
28=Canadian WHMIS	29=OSHA CEILING	30=TSCA Sect 8 FYI

11. PRODUCT TOXICOLOGY DATA

EYE IRRITATION:

No product toxicology data available. The hazard evaluation was based on data from similar materials.

SKIN IRRITATION:

No product toxicology data available. The hazard evaluation was based on data from similar materials.

DERMAL TOXICITY:

No product toxicology data available. The hazard evaluation was based on data from similar materials.

RESPIRATORY/INHALATION:

No product toxicology data available. The hazard evaluation was based on data from similar materials.

INGESTION:

No product toxicology data available. The hazard evaluation was based on data from similar materials.

12. ADDITIONAL HEALTH DATA

ADDITIONAL HEALTH DATA COMMENT:

This product contains zinc alkyl dithiophosphates (ZDDPs). Several ZDDPs have been reported to have weak mutagenic activity in cultured mammalian cells but only at concentrations that were toxic to the test cells. We do not believe that there is any mutagenic risk to workers exposed to ZDDPs.

This product contains butyl benzyl phthalate. In a cancer bioassay conducted by the National Toxicology Program (NTP), mice and rats were given butyl benzyl phthalate in their diets. All groups of male rats were terminated at six months due to excessive mortality. Female rats showed an increase in cancer but both sexes of mice did not. This study has been declared invalid and is being repeated by NTP.

This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for

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NDA - No Data Available	NA - Not Applicable	

Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B).

During use in engines, contamination of oil with low levels of cancer-causing combustion products occurs. Used motor oils have been shown to cause skin cancer in mice following repeated application and continuous exposure. Brief or intermittent skin contact with used motor oil is not expected to have serious effects in humans if the oil is thoroughly removed by washing with soap and water. See Chevron Material Safety Data Sheet No. 1793 for additional information on used motor oil.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since the information contained herein may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modification of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

Revision Number: 1

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MSDS Number: 004457

NDA - No Data Available

NA - Not Applicable

Emergency Number (800)457-2022 or (510)233-3737

Material Safety Data Sheet

CHEVRON RPM Heavy Duty Motor Oil SAE 15W-40

CPS225044

Page 1 of 7

PRIESTLEY OIL & CHEMICAL 3746534
CO., INC.
P O BOX 12570
PORTLAND, OR 97212

MATERIAL ORDERED FOR:
BULK LUBE OIL PICK-UP WE
FOB WILLBRIDGE
PORTLAND, OR 97210

Print Date: July 24, 1992

This Material Safety Data Sheet contains environmental, health and toxicology information for your employees. Please make sure this information is given to them. It also contains information to help you meet community right-to-know/emergency response reporting requirements under SARA Title III and many other laws. If you resell this product, this MSDS must be given to the buyer or the information incorporated in your MSDS. Discard any previous edition of this MSDS.

Revised to update section 1 (Product Identification).

1. PRODUCT IDENTIFICATION

CHEVRON RPM Heavy Duty Motor Oil SAE 15W-40

PRODUCT NUMBER(S): CPS225044
PRODUCT INFORMATION: (800)582-3835

UPDATED
2-95

Revision Number: 3

Revision Date: 12/31/91

MSDS Number: 004444

NDA - No Data Available

NA - Not Applicable

Prepared According to the OSHA Hazard Communication
Standard (29 CFR 1910.1200) by the Chevron Environmental
Health Center, Inc., P.O. Box 4054, Richmond, CA 94804.

2. FIRST AID - EMERGENCY NUMBER (800)457-2022 OR (510)233-3737

EYE CONTACT:

No first aid procedures are required. However, as a precaution flush eyes with fresh water for 15 minutes. Remove contact lenses if worn.

SKIN CONTACT:

No first aid procedures are required. As a precaution, wash skin thoroughly with soap and water. Remove and wash contaminated clothing.

INHALATION:

Since this material is not expected to be an immediate inhalation problem, no first aid procedures are required.

INGESTION:

If swallowed, give water or milk to drink and telephone for medical advice. Consult medical personnel before inducing vomiting. If medical advice cannot be obtained, then take the person and product container to the nearest medical emergency treatment center or hospital.

3. IMMEDIATE HEALTH EFFECTS - (ALSO SEE SECTIONS 11 & 12)

EYE CONTACT:

This substance is not expected to cause prolonged or significant eye irritation. This hazard evaluation is based on the data from similar materials.

SKIN IRRITATION:

This substance is not expected to cause prolonged or significant skin irritation. This hazard evaluation is based on data from similar materials.

DERMAL TOXICITY:

The systemic toxicity of this substance has not been determined. However, it should be practically non-toxic to internal organs if it gets on the skin. This hazard evaluation is based on data from similar materials.

RESPIRATORY/INHALATION:

The systemic toxicity of this substance has not been determined. However, it should be practically non-toxic to internal organs if inhaled. This hazard evaluation is based on data from similar materials.

INGESTION:

The systemic toxicity of this substance has not been determined. However, it should be practically non-toxic to internal organs if swallowed. This hazard evaluation is based on data from similar materials.

4. PROTECTIVE EQUIPMENT

EYE PROTECTION:

No special eye protection is usually necessary.

SKIN PROTECTION:

No special skin protection is usually necessary. Avoid prolonged or frequently repeated skin contact with this material. Skin contact can be

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NDA - No Data Available

NA - Not Applicable

minimized by wearing protective clothing.

RESPIRATORY PROTECTION:

No special respiratory protection is normally required. However, if operating conditions create high airborne concentrations, the use of an approved respirator is recommended.

VENTILATION:

Use adequate ventilation to keep the airborne concentrations of this material below the recommended exposure standard.

5. FIRE PROTECTION

FLASH POINT: (COC) 419F (215C) Min.

AUTOIGNITION: NDA

FLAMMABILITY LIMITS (% by volume in air): Lower: NA Upper: NA

EXTINGUISHING MEDIA:

CO2, Dry Chemical, Foam, Water Fog

NFPA RATINGS: Health 0; Flammability 1; Reactivity 0; Special NDA; (Least-0, Slight-1, Moderate-2, High-3, Extreme-4). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association or, if applicable, the National Paint and Coating Association, and do not necessarily reflect the hazard evaluation of the Chevron Environmental Health Center. Read the entire document and label before using this product.

FIRE FIGHTING PROCEDURES:

For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

COMBUSTION PRODUCTS:

Normal combustion forms carbon dioxide, water vapor and may produce oxides of sulfur, nitrogen and phosphorous. Incomplete combustion can produce carbon monoxide.

6. STORAGE, HANDLING, AND REACTIVITY

HAZARDOUS DECOMPOSITION PRODUCTS:

NDA

STABILITY:

Stable.

HAZARDOUS POLYMERIZATION:

Polymerization will not occur.

INCOMPATIBILITY:

May react with strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

SPECIAL PRECAUTIONS:

DO NOT weld, heat or drill container. Residue may ignite with explosive violence if heated sufficiently. CAUTION! Do not use pressure to empty drum or drum may rupture with explosive force.

7. PHYSICAL PROPERTIES

SOLUBILITY: Soluble in hydrocarbon solvents; insoluble in water.

APPEARANCE: Dark amber liquid.

BOILING POINT: NDA

MELTING POINT: NA

EVAPORATION: NA

SPECIFIC GRAVITY: 0.89 @ 15.6/15.6C

VAPOR PRESSURE: NA

PERCENT VOLATILE (VOLUME %): NA

VAPOR DENSITY (AIR=1): NA

VISCOSITY: 13.9 cSt @ 100C (Min.)

8. ENVIRONMENTAL CONCERNS, SPILL RESPONSE AND DISPOSAL

CHEMTREC EMERGENCY PHONE NUMBER: (800) 424-9300 (24 hour).

SPILL/LEAK PRECAUTIONS:

This material is not expected to present any environmental problems other than those associated with oil spills.

Stop the source of the leak or release. Clean up releases as soon as possible. Contain liquid to prevent further contamination of soil, surface water or groundwater. Clean up small spills using appropriate techniques such as sorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Follow prescribed procedures for reporting and responding to larger releases.

DISPOSAL METHODS:

Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations. Contact local environmental or health authorities for approved disposal of this material.

9. EXPOSURE STANDARDS, REGULATORY LIMITS AND COMPOSITION

COMPOSITION COMMENT:

All the components of this material are on the Toxic Substances Control Act Chemical Substances Inventory.

This product fits the ACGIH definition for mineral oil mist. The ACGIH TLV is 5 mg/m³, the OSHA PEL is 5 mg/m³.

The percent compositions are given to allow for the various ranges of the components present in the whole product and may not equal 100%.

PERCENT/CAS# COMPONENT/REGULATORY LIMITS

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NDA - No Data Available

NA - Not Applicable

100.0 % CHEVRON RPM Heavy Duty Motor Oil SAE 15W-40

CONTAINING

> 75.0 % DISTILLATES, HYDROTREATED HEAVY PARAFFINIC

CAS64742547 5mg/3 mist ACGIH TLV
10mg/m3 mist ACGIH STEL
5mg/m3 mist OSHA TWA

AND

DISTILLATES, SOLVENT DEWAXED HEAVY PARAFFINIC
CAS64742650

< 25.0 % ADDITIVES INCLUDING THE FOLLOWING

< 1.5 % ZINC ALKYL DITHIOPHOSPHATE

CAS68649423 A toxic chemical subject to the reporting requirements of
Section 313 of Title III of the Superfund Amendments and
Reauthorization Act of 1986 and 40 CFR Part 372.

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	TPQ - Threshold Planning Quantity
RQ - Reportable Quantity	CPS - CUSA Product Code
CC - Chevron Chemical Company	CAS - Chemical Abstract Service Number

10. REGULATORY INFORMATION

DOT SHIPPING NAME: NOT DESIGNATED AS A HAZARDOUS MATERIAL BY THE
FEDERAL DOT

DOT HAZARD CLASS: NOT APPLICABLE

DOT IDENTIFICATION NUMBER: NOT APPLICABLE

SARA 311 CATEGORIES:

1. Immediate (Acute) Health Effects; NO
2. Delayed (Chronic) Health Effects; NO
3. Fire Hazard; NO
4. Sudden Release of Pressure Hazard; NO
5. Reactivity Hazard; NO

The following components of this material are found on the regulatory
lists indicated by the number below the component name:

DISTILLATES, HYDROTREATED HEAVY PARAFFINIC

is found on lists: 14,15,17,

ZINC ALKYL DITHIOPHOSPHATE

is found on lists: 01,10,11,

REGULATORY LISTS SEARCHED:

01=SARA 313

02=MASS RTK

03=NTP Carcinogen

04=CA Prop. 65

05=MI 406

06=IARC Group 1

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NA - Not Applicable

07=IARC Group 2A	08=IARC Group 2B	09=SARA 302/304
10=PA RTK	11=NJ RTK	12=CERCLA 302.4
13=MN RTK	14=ACGIH TLV	15=ACGIH STEL
16=ACGIH Calculated TLV	17=OSHA TWA	18=OSHA STEL
19=Chevron TLV	20=EPA Carcinogen	21=TSCA Sect 4(e)
22=TSCA Sect 5(a)(e)(f)	23=TSCA Sect 6	24=TSCA Sect 12(b)
25=TSCA Sect 8(a)	26=TSCA Sect 8(d)	28=Canadian WHMIS
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NA - Not Applicable

thoroughly removed by washing with soap and water. See Chevron Material Safety Data Sheet No. 1793 for additional information on used motor oil.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modification of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.